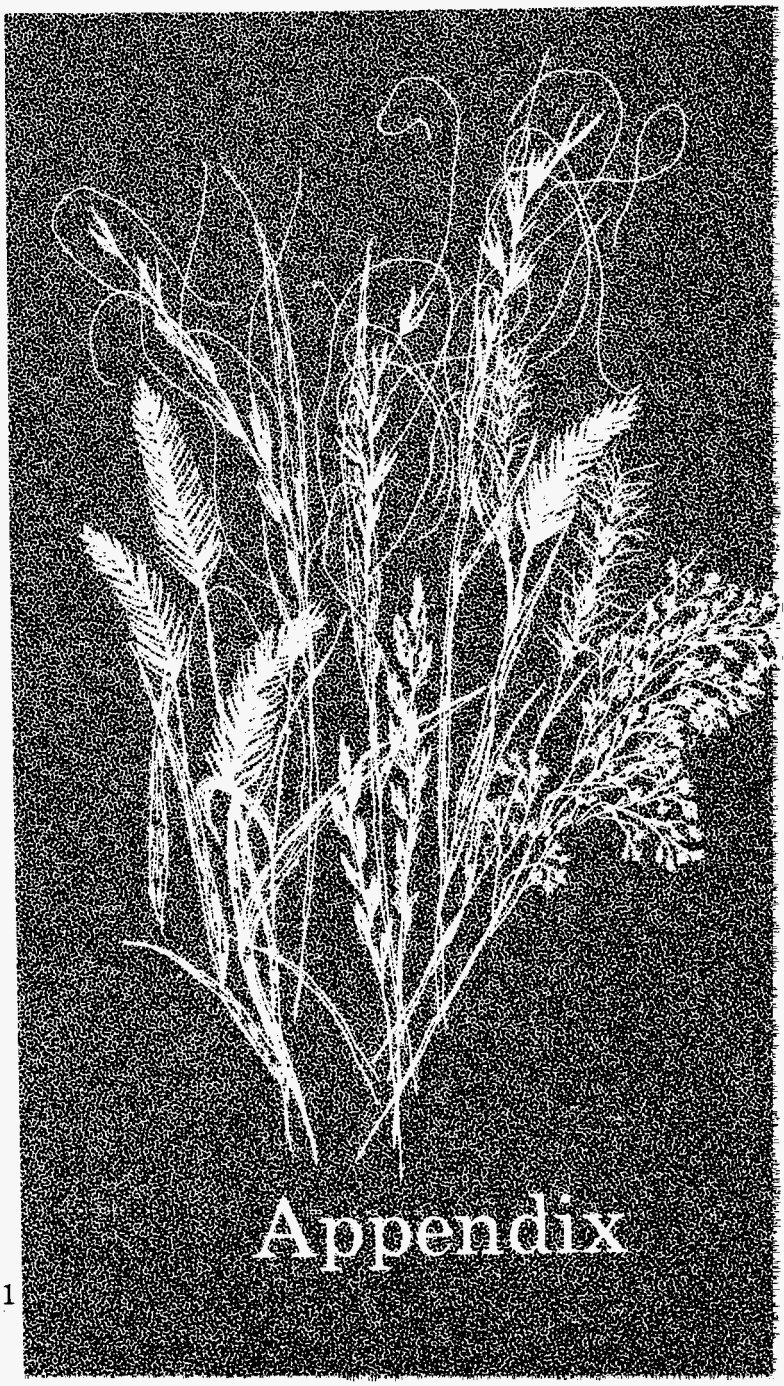


Appendix

APPENDIX 1.1: ACQUISITION, RETENTION AND DISPOSAL CRITERIA

Supplement to State Director Guidance, June 1984 - Land Pattern Review and Land Adjustment

A. Acquisition Criteria

1. Facilitate access to areas retained for long term public use.
2. Enhance Congressionally designated areas, rivers, or trails.
3. Be primarily focused in the "retention" areas. Acquisition outside the retention areas will only be considered if the action leads to and/or facilitates long term needs or program objectives.
4. Facilitate national, state and local BLM priorities or mission statement needs.
5. Place emphasis where BLM land use or activity plans are completed. Proposals must facilitate implementation and/or be consistent with these plans.
6. Stabilize or enhance local economies or values.
7. Meet long term public land management goals as opposed to short term.
8. Be of sufficient size to improve use of adjoining public lands or, if isolated, large enough to allow the identified potential public land use.
9. Allow more diverse use, more intensive use, or a change in uses to better fulfill the Bureau's mission.
10. Enhance the opportunity for new or emerging public land uses or values.
11. Contribute to a wide spectrum of uses or large number of public land users.
12. Facilitate management practices, uses, scale of operations or degrees of management intensity that are viable under economic program efficiency standards.
13. Secure for the public significant water related land interests. These interests will include lake shore, river front, stream, pond or spring sites.

Program Specific Acquisition Criteria

Minerals

1. Consolidation of mineral estates -- from the minerals program viewpoint this is probably the most important reason for acquisition. The primary purpose for consolidation of estates is improvement of potential for development while improving resource management and economic values.

   This concept can be applied to some deposits of coal, phosphate, potash, oil shale and tar sands. It is difficult to envision that this approach would be useful for oil and gas or locatable minerals.

2. Acquisition in response to a Federal project need, as in the case of a dam project. Criteria for this type of acquisition would generally include:

   a. Where development of the Federal project would preclude the mineral estate owner from exercising development rights; or

   b. Where the exercise of the mineral estate owners right of development would materially interfere with the Federal project.

3. Acquisition mandated by law. The best example of this would be where an alluvial valley floor has precluded coal mining, triggering an exchange.

Livestock Management

Acquire non-Federal holdings in key allotments which will enhance manageability and investment opportunity in improvement and maintenance category allotments.

Timber Management

Focus acquisition priority on areas:

1. Which exceed 30 cu. ft./acre in growth of commercial timber unless the areas will enhance the harvest of adjacent lands. In this case, the standard may be lowered to 20 cu. ft./acre in annual growth.
2. Contiguous to, or which facilitate access to public forest land.
3. Containing 80 acres or more of commercial timber. If less than 80 acres, the tract(s) must be logical logging unit(s) or facilitate commercial management of adjacent public forest land.
4. Containing enough harvestable volume for a feasible commercial logging unit after physical, biological or other land use constraints are considered.

Recreation

Acquire lands with the following significant public values:

1. National Values

   a. Congressionally designated areas/rivers/trails

   b. Congressionally designated study areas/rivers/trails

2. State Values

   a. Select lands that enhance state recreation trails and waterways (see State Comprehensive Outdoor Recreation Plan; SCORP Vol. 2, 1978, p. 149) or those with interstate, state, and multi-county use significance.

   b. Other statewide and multi-county values.

3. Local values for extensive use, such as hunting, fishing, ORV and snowmobile use. Higher priority will be given to acquisition of these values where such extensive use will compliment and enhance these uses on public lands.

4. Acquire access through easement to the above significant values as needed to facilitate public use if surface acquisition is undesirable or not possible.

Wilderness

Acquire in-holdings within the boundaries of Congressionally designated wilderness areas under BLM administration. Priorities are:

1. State in-holdings to be acquired through exchange only

2. Private in-holdings to be acquired by mutual agreement involving exchange, purchase, or gift

In the acquisition of access to designated wilderness areas highest priority will be:

1. Where no access exists.

2. Where it is needed for proper management as identified in wilderness management plans.

Cultural Resources

Any cultural site to be acquired should meet the following evaluation standards of MSO Manual Supplement 8111.24:

1. High Research Value

2. Moderate Scarcity

3. Possess some other unique values such as association with an important historic person or high aesthetic values, or

4. Contribute significantly to interpretive potential of cultural resources already in public ownership.

Strong consideration should be given to manageability. There are only a limited number of potential uses to which a cultural resource can be put (see IM 78-339). The principal use is probably research. Any site acquired for this purpose should be protectable and accessible. The second most important use may be some form of visitor or recreation use. Acquired sites in this case should be in areas also important to the Recreation Program unless they can stand on their own.

The major deciding factor for site acquisition after applying the basic criteria should be the potential for actively managing the site. Sites should not be acquired on scattered or isolated parcels unless they are of overwhelming cultural importance.

Wildlife Habitat Management

In general, areas with important wildlife which are large enough and suitable for public hunting, fishing and trapping and areas suitable for cooperative management under the Sikes Act.

High priority areas for retention and acquisition will be lands with significant wildlife values as defined below. These areas may be of any size.

1. Threatened and Endangered Species (approved recovery plans will also govern actions on these areas)

   a. Black-footed Ferret. Occupied habitat or areas identified through planning for future ferret populations.

   b. Grizzly Bear. Lands containing grizzly population centers (Management Situation 1 and 2 Lands*).

   c. Whooping Crane. Suitable or potential habitat.

   d. Bald Eagle. Historical nest sites with remaining potential, present nest sites, or documented roosting or wintering areas.

   e. Grey Wolf. Occupied habitat.

   f. Peregrine Falcon. Verified nest areas and suitable sites for reestablishment.

2. Fisheries.** Access to or larger areas adjacent to Class 1, 2 or 3 streams** and lake and pond fisheries. Stream areas with restoration potential to become Class 1, 2 or 3 streams. Sites to develop additional fisheries especially near population centers. Sites supporting spawning or nursery areas which may be temporal in nature but important to downstream fisheries. Land that would enable us to acquire needed instream flow reservations.

3. Big Game. Important habitat areas such as crucial winter and associated spring/fall transition areas, kidding/fawning/calving/lambing areas, crucial wallow complexes, mineral licks, and security areas.

4. Upland Game Birds, Migratory Birds and Waterfowl. Crucial breeding, nesting, resting, roosting, feeding and wintering habitat areas or complexes. These will vary in size, for example, a highly productive one acre wetland or 100 acres of nesting cover for pheasants.

5. Raptors. Existing and potential nesting areas for sensitive species or significant nesting complexes for nonsensitive species.

6. Nongame. Crucial habitat complexes.

* From Guidelines for Management Involving Grizzly Bears in Yellowstone Area, USFS, NPS 1979.

** Class of Streams defined by Montana Department of Fish, Wildlife and Parks, 1980. Stream Evaluation Map State of Montana.

B. Retention Criteria

1. Areas of national environmental significance: These include but are not limited to:

   a. Wilderness, Wilderness Study Areas and Former WSAs being Studied for Protective Management

   b. Wild and Scenic Rivers

   c. National Scenic & Historic Trails and Study Trails

   d. Lands containing nationally significant cultural resource sites nominated to or eligible for the National Register of Historic Places

   e. National conservation areas

   f. Wetlands and Riparian Areas under Executive Order 11990

   g. Other Congressionally Designated Areas and Study Areas

   h. Wild Horse Management Areas

   i. Areas of Critical Environmental Concern

2. Areas of national economic significance: these include but are not limited to:

   a. Designated Mineral Resource Areas where disposal of the surface would unnecessarily interfere with the logical development of the mineral estate, e.g., surface minerals, coal, phosphate, known geologic structures, etc.

   b. Public lands containing strategic minerals needed for national defense.

3. Public lands used in support of national defense: these include but are not limited to National Guard maneuver areas.

4. Areas where management is cost-effective or lands containing other important characteristics and public values which can best be managed in public ownership by BLM will be retained. These include but are not limited to:

   a. strategic tracts along rivers, streams, lakes, ponds, springs and trails

   b. community watershed and/or flood plains

   c. wildlife priority areas as defined under acquisition criteria for wildlife habitat areas

   d. important hunting or fishing areas

   e. recreation sites and areas

   f. cultural resource sites etc.

5. Lands with a combination of multiple-use values which dictate they should be retained in public ownership and managed by BLM.

6. Areas where future plans will lead to further consolidation and improvement of lands patterns and management efficiency.

7. Areas which the general public, state and local government consider suitable for permanent public ownership.

8. Public lands withdrawn by the BLM or another Federal agency for which the purpose of the withdrawal remains valid and the resources uses can be managed concurrently by BLM.

9. Public lands that contribute significantly to the stability of the local economy by virtue of Federal ownership.

10. Public lands which provide public access and contain previously mentioned public values which, when considered together, warrant their retention.

C. Disposal Criteria

1. Lands specifically identified through land use plans for exchange, transfer, Recreation and Public Purposes Act applications or sale.

2. Lands of limited public value.

3. Widely scattered parcels which are difficult for BLM to manage with anything beyond minimal custodial administration and have no significant public values.

4. Lands with high public values for proper management by other Federal agencies, or state or local government.

5. Lands which will serve important public objectives (such as community expansion) as provided in FLPMA Sec. 203(a)(3).

6. Lands where disposal would aid in aggregating or repositioning other public lands or public land resource values in retention areas to facilitate national, state and local objectives.

7. Lands acquired for a specific Federal purpose which are no longer required for that or any other Federal purpose.

8. Lands with long term unauthorized use problems, if the lands are not required for public purposes.

9. Lands in which the highest public value will be attained through long term agricultural, commercial or industrial development.

The following criteria are the criteria that were applied and refined from the Supplement to State Director Guidance, June 1984 for each resource area.

A. Acquisition Criteria

1. GREAT FALLS RESOURCE AREA

ACQUISITION: The following criteria will be used to guide the BLMs acquisition of lands, easements and/or minerals through exchange or other means.

1. Facilitate access to retention areas.

2. Lands which will enhance retention areas.

3. Secure for the public significant water related land interests. These interests will include river front, stream, pond, potholes, riparian or spring sites.

WATERSHED:

1. Acquire watershed areas for fish reservoirs and range projects.

GRAZING MANAGEMENT:

1. Acquire non-Federal holdings in key allotments which will enhance manageability and investment opportunity in grazing allotments;

2. and C allotments contiguous to I and M allotments.

WILDLIFE HABITAT MANAGEMENT:

Acquire habitat for:

1. Threatened and endangered plant and animal species including but not limited to:

   bald eagle: historic nesting areas with continuing potential, present sites, documented roosting and wintering areas;

   peregrine falcon: verified nest areas and suitable sites for reestablishment.

2. Fisheries: access to Class 1, 2, and 3 streams, lake and pond fisheries.

3. Important big game habitat.

4. Crucial breeding, nesting areas for upland game birds.

5. Raptors: existing and potential nesting areas for threatened and endangered and sensitive species or significant nesting complexes for non-sensitive species.

RECREATION:

1. Acquire lands with the following significant values:

   Designated rivers and trails;

   Congressionally designated rivers, trails and WSAs.

2. Acquire access for significant use areas, especially to major rivers, streams and the Sweetgrass Hills.

CULTURAL: Acquire important archaeological and historic sites along designated rivers and trails and acquire potential national register sites adjacent to BLM lands.

MINERALS:

1. Acquire surface lands in areas of extensive mineral estate, or known production areas thereby reuniting surface and subsurface estate.

2. Acquire lands to enhance minerals management.

2. HAVRE RESOURCE AREA

ACQUISITION: Lands in this category are the types of tracts the BLM will acquire through the various acquisition programs.

1. Facilitate access to retention areas.

2. Enhance Congressionally designated rivers, trails and study trails.

3. Lands which will enhance retention areas.

4. Secure for the public significant water related land interests. These interests will include river front, stream, potholes, riparian areas, pond or spring sites.

WATERSHED:

1. Acquire watershed areas for fish reservoirs and range projects.

GRAZING MANAGEMENT: Acquire non-Federal holdings in key allotments which will enhance manageability and investment opportunity in grazing allotments.

RECREATION:

1. Acquire lands with the following significant values:

   Designated rivers and trails;

   Congressionally designated study rivers, trails and WSAs.

2. Acquire access for significant use areas, especially to major rivers and streams.

CULTURAL: Acquire important archeological and historic sites along designated rivers and trails and acquire potential national register sites adjacent to BLM lands.

WILDLIFE

Acquire habitat for:

1. Threatened and endangered species;

   bald eagle: historic nesting areas with continuing potential, present sites, documented roosting and wintering areas;

   peregrine falcon: verified nest areas and suitable sites for reestablishment.

2. Fisheries: access to Class 1, 2, and 3 streams, lake and pond fisheries.

3. Important big game habitat.

4. Crucial breeding, nesting areas for grouse and pheasants.

5. Raptors: existing and potential nesting areas for sensitive species or significant nesting complexes for nonsensitive species.

MINERALS:

1. Acquire surface lands in areas of extensive mineral estate, or known production areas thereby reuniting surface and subsurface estate.

2. Acquire lands to enhance minerals management.

B. RETENTION CRITERIA

1. Great Falls Resource Area

Retention Areas: These lands will remain in public ownership and be managed by BLM. Minor adjustments may occur in the future. These adjustments will be primarily limited to surface management agency changes.

1. Areas of national envfronmental significance: These include but are not limited to:

   a. Wild and Scenic Rivers

   b. National Scenic & Historic Trails and Study Trails

   c. National Register of Historic Places

   d. Wetlands and Riparian Areas under EO 11988 and 11990, defined as:

      those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that request saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, and flats, and natural ponds. (EO 11990 sec. 5c)

   e. Special Management Areas

   f. Threatened and endangered plan and animal habitat.

2. Areas of national economic significance: include but not limited to:

   lands containing strategic minerals needed for national defense;

   lands containing nominated areas of critical mineral potential.

3. Public lands used in support of national defense.

4. Areas where management is cost-effective or lands containing other important characteristics and public values which can best be managed in public ownership by BLM will be retained.

   Including but not limited to:

   a. strategic tracts along rivers, streams, lakes, ponds, springs and trails;

   b. wildlife priority areas as defined under acquisition criteria particularly sage grouse leks, sharp-tailed grouse leks, crucial antelope range and major concentration areas of sensitive species (raptors in particular);

   c. important fishing areas;

   d. intensive recreation sites and areas.

5. Public lands withdrawn by BLM or another Federal agency for which the purposes remains valid.

6. Retain surface and subsurface estate in areas with known solid or fluid mineral production.

7. Stabilize or enhance local economies or values.

2. Havre Resource Area

RETENTION AREAS: Lands in this area should be retained in long term public ownership. Lands in this category either require retention by law or the tract has more than one important resource value. Disposal through exchange for the latter tracts are allowed only if the exchange significantly increases public values.

1. Areas of national environmental significance: These include but are not limited to:

   a. WSAs;

   b. Wild and Scenic Rivers;

   c. National Scenic & Historic Trails and Study Trails;

   d. National Register Historic Places;

   e. Wetlands and Riparian Areas under EO 11990 and 11988, defined as:

      Those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds (EO 11990 Sec. 5c);

   f. Special Management Areas;

   g. Threatened and Endangered habitat.

2. Areas where management is cost-effective or lands containing other important characteristics and public values which can be best be managed in public ownership by BLM will be retained. Including but not limited to:

   a. strategic tracts along rivers, streams, lakes, ponds, springs, and trails;

   b. wildlife priority areas as defined under acquisition criteria particularly sage grouse leks, sharp-tailed grouse leks and crucial antelope range;

   c. important fishing areas;

   d. recreation sites and areas.

3. Public lands withdrawn by BLM or another Federal agency for which the purpose remains valid.

4. Retain surface and subsurface estate in known solid or fluid mineral production.

C. DISPOSAL CRITERIA (EXCHANGE)

1. Great Falls Resource Area

   1. Lands with low resource values i.e., isolated, no access, custodial allotments, etc. There is no acreage limit in this category.

   2. Lands with long term unauthorized use problems, if the lands are not required for public purposes.

   3. Lands in which the highest public value will be attained through long term agricultural, commercial or industrial development; Class III and better lands for agricultural use.

2. Havre Resource Area

   DISPOSAL:

   Lands with low resource values i.e., isolated, no access, custodial allotments, etc. There is no acreage limit in this category.

   1. Lands with long term unauthorized use problems, if the lands are not required for public purposes.

   2. Lands in which the highest public value will be attained through long term agricultural, commercial or industrial development; Class III and better lands for agriculture.

   FLPMA Section 203(a) sale criteria

   1. such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or

   2. such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or

   3. disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh public other public objectives and values, including but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

APPENDIX 1.2: DISPOSAL LIST

List 1 (Meets Sale Criteria, Emphasis on Exchange)

GREAT FALLS RESOURCE AREA

Tract No.	Location	Total Tract Acres
	Glacier County	
	T. 32 N., R. 5 W., PMM	
	Section 3: NW¼SW¼	40.00
	4: E½SW¼, SW¼SW¼, NE¼SE¼	160.00
	8: SE¼NE¼	40.00
	17: W½NE¼, NE¼NW¼	120.00
	Toole County	
	T. 30 N., R. 1 W., PMM	
	Section 6: Lot 1	37.41
	T. 31 N., R. 1 W., PMM	
*	Section 19: NE¼NE¼	40.00
*	27: SW¼SW¼	40.00
*	29: SW¼SE¼	40.00
	30: Lot 1, NW¼NE¼, NE¼NW¼	118.57
	31: NE¼NE¼, S½SE¼	120.00
	T. 31 N., R. 2 W., PMM	
	Section 1: SW¼NE¼, E½SE¼	120.00
	2: Lot 1, 2, SE¼NE¼, SE¼SW¼, SW¼SE¼	199.58
	11: NW¼NE¼, NE¼NW¼, SE¼SW¼, NE¼SE¼	160.00
	12: NW¼	160.00
	13: SW¼NE¼, W½, N½SE¼	440.00
	14: S½SW¼, NE¼SW¼	120.00
	18: Lot 4	35.96
	22: NE¼SW¼	40.00
	23: E½SW¼	80.00
	24: E½, E½W½, NW¼NW¼	520.00
	26: NE¼NW¼	40.00
	T. 31 N., R. 3 W., PMM	
*	Section 5: Lots 1, 2	80.32
	6: Lot 2, SW¼NE¼, SE¼SW¼, W½SE¼	200.03
	7: Lot 1, E½NE¼, NW¼NE¼, NE¼NW¼	193.05
	13: SE¼SE¼	40.00
	T. 31 N., R. 4 W., PMM	
	Section 12: E½NE¼, SW¼NE¼, E½SW¼, NW¼SE¼	240.00
	T. 32 N., R. 2 W., PMM	
	Section 6: Lot 1	37.36
	7: S½NE¼, E½SE¼	160.00
	17: NE¼NE¼	40.00
	17: W½NW¼	80.00
	T. 32 N., R. 3 W., PMM	
	Section 12: S½S½	160.00
	13: N½NE¼	80.00
	22: SE¼NE¼	40.00
	T. 33 N., R. 3 W., PMM	
	Section 13: W½SW¼	80.00
	14: E½SE¼	80.00
	21: SW¼NE¼	40.00
	22: N½SW¼, SW¼SW¼, NW¼SE¼	160.00
	23: NE¼, NE¼NW¼, E½SE¼, NW¼SE¼	320.00
	24: W½NW¼, SE¼SE¼	120.00
	25: SE¼SW¼	40.00
	26: NE¼NE¼	40.00
	27: NE¼NE¼	40.00
	T. 34 N., R. 1 E., PMM	
*	Section 18: NE¼NE¼	40.00
	T. 34 N., R. 2 W., PMM	
*	Section 10: NW¼NE¼	40.00
	T. 34 N., R. 3 W., PMM	
	Section 3: SW¼SE¼	40.00
	10: N½SW¼	80.00
	28: W½SW¼, SE¼SW¼	120.00
	33: NW¼NE¼, N½NW¼	120.00
	Toole County (cont.)	
	T. 35 N., R. 1 W., PMM	
	Section 19: NE¼NW¼	40.00
	30: NE¼NW¼	40.00
	31: SE¼NW¼	40.00
	T. 35 N., R. 2 W., PMM	
	Section 2: SE¼	160.00
	6: Lot 2	39.80
	12: N½, N½SW¼, SE¼SW¼	440.00
	13: E½NW¼	80.00
	25: S½SW¼	80.00
	T. 35 N., R. 3 W., PMM	
	Section 27: E½SW¼	80.00
	32: E½SW¼	80.00
	33: NE¼NE¼, W½SE¼	120.00
	34: NE¼NE¼, NW¼NW¼, SE¼SW¼, SW¼SE¼	160.00
	T. 36 N., R. 2 E., PMM	
*	Section 15: NW¼NE¼, SE¼SE¼, SW¼SE¼	120.00
	T. 36 N., R. 3 E., PMM	
*	Section 9: NE¼SW¼	40.00
	18: Lots 5, 6, 11, 12, NW¼SE¼	96.58
	T. 36 N., R. 2 W., PMM	
*	Section 17: S½NE¼, SE¼NW¼, E½SW¼, SE¼	360.00
	TOTAL	15,689.00

*Lands identified for disposal in State Director Guidance.

APPENDIX 1.2: DISPOSAL LIST

List 1, Contd.

HAVRE RESOURCE AREA

Tract No.	Location	Total Tract Acres
	Blaine County	
	T. 36 N., R. 22 E., Sec. 14: SE¼NE¼	40.00
	T. 36 N., R. 22 E., Sec. 31: SE¼NW¼	40.00
	T. 33 N., R. 20 E., Sec. 25: NE¼NE¼	40.00
	T. 32 N., R. 19 E., Sec. 3: Lot 3	39.10
	T. 32 N., R. 22 E., Sec. 6: Lot 4	34.58
	T. 32 N., R. 18 E., Sec. 1: SW¼SW¼	40.00
	T. 32 N., R. 23 E., Sec. 8: SE¼NE¼, NW¼SE¼	120.00
	T. 32 N., R. 23 E., Sec. 9: NW¼SW¼	
	T. 32 N., R. 20 E., Sec. 15: SW¼NW¼	40.00
	T. 32 N., R. 21 E., Sec. 13: NE¼SW¼, NW¼SE¼	80.00
	T. 32 N., R. 20 E., Sec. 14: S½SE¼	80.00
	T. 32 N., R. 19 E., Sec. 22: SE¼NE¼, NE¼SE¼	80.00
	T. 32 N., R. 20 E., Sec. 19: W½NE¼, NW¼SE¼	120.00
	T. 32 N., R. 19 E., Sec. 26: W½SW¼	80.00
	T. 32 N., R. 19 E., Sec. 33: SE¼	160.00
	T. 31 N., R. 17 E., Sec. 12: E½E½, SW¼SE¼	342.64
	T. 31 N., R. 18 E., Sec. 7: Lots 1, 2, 3, 4	
	T. 31 N., R. 21 E., Sec. 20: NW¼NE¼	40.00
	T. 31 N., R. 22 E., Sec. 19: SE¼SE¼	40.00
	T. 30 N., R. 17 E., Sec. 2: SE¼NW¼	40.00
	T. 29 N., R. 17 E., Sec. 8: NW¼NE¼	40.00
	T. 35 N., R. 25 E., Sec. 14: S½SE¼	80.00
	T. 28 N., R. 22 E., Sec. 29: NE¼SW¼	40.00
	T. 29 N., R. 20 E., Sec. 1: NW¼SE¼	40.00
	T. 29 N., R. 20 E., Sec. 25: S½SE¼	597.79
	T. 29 N., R. 21 E., Sec. 30: Lots 3, 4, SE¼NE¼, E½SE¼, SE¼	
	T. 29 N., R. 21 E., Sec. 31: Lot 1, N½NE¼, NE¼NW¼	
	T. 29 N., R. 21 E., Sec. 6: SE¼SW¼	40.00
	T. 29 N., R. 21 E., Sec. 8: S½NE¼	80.00
	T. 29 N., R. 21 E., Sec. 18: Lots 3, 4, E½SW¼, W½SE¼	320.86
	T. 29 N., R. 21 E., Sec. 19: Lots 1, 2	
	T. 29 N., R. 21 E., Sec. 19: S½NE¼	80.00
	T. 29 N., R. 21 E., Sec. 20: SE¼SW¼	40.00
	T. 29 N., R. 21 E., Sec. 24: SE¼SW¼	40.00
	T. 29 N., R. 21 E., Sec. 24: SE¼SE¼	40.00
	T. 29 N., R. 21 E., Sec. 34: SW¼NW¼	40.00
	T. 28 N., R. 19 E., Sec. 13: S½NE¼, NW¼SE¼	120.00
	T. 28 N., R. 20 E., Sec. 30: SE¼SW¼	188.30
	T. 28 N., R. 20 E., Sec. 31: Lots, 1, 2, E½NW¼	
	T. 28 N., R. 21 E., Sec. 6: Lots 4, 5	73.68
	T. 28 N., R. 21 E., Sec. 7: Lot 1, NE¼NW¼	77.06
	T. 28 N., R. 21 E., Sec. 6: SE¼SE¼	40.00
	T. 28 N., R. 21 E., Sec. 17: NW¼SW¼	80.00
	T. 28 N., R. 21 E., Sec. 18: NE¼SE¼	
	T. 28 N., R. 21 E., Sec. 17: S½SE¼	80.00
	T. 28 N., R. 21 E., Sec. 19: NW¼NE¼	40.00
	T. 27 N., R. 17 E., Sec. 26: SW¼NW¼	40.00
	T. 27 N., R. 17 E., Sec. 26: NE¼SW¼	40.00
	T. 27 N., R. 17 E., Sec. 34: SE¼SE¼	40.00
	T. 27 N., R. 18 E., Sec. 27: SE¼NE¼	40.00
	T. 27 N., R. 18 E., Sec. 32: SE¼NW¼	40.00
	T. 27 N., R. 18 E., Sec. 35: NW¼NE¼	40.00
	T. 27 N., R. 18 E., Sec. 31: SE¼SW¼, SW¼SE¼	80.00
	T. 27 N., R. 18 E., Sec. 34: SW¼SW¼	82.37
	T. 26 N., R. 18 E., Sec. 3: Lot 4	
	T. 28 N., R. 19 E., Sec. 30: SW¼NE¼	40.00
	T. 27 N., R. 21 E., Sec. 27: NW¼	160.00
	T. 27 N., R. 22 E., Sec. 33: Lot 8	52.36
	T. 26 N., R. 17 E., Sec. 12: NW¼NW¼	40.00
	T. 26 N., R. 17 E., Sec. 14: SE¼NW¼	40.00
	T. 26 N., R. 17 E., Sec. 13: SE¼SW¼	40.00
	T. 26 N., R. 18 E., Sec. 9: NE¼SW¼	40.00
	T. 26 N., R. 18 E., Sec. 18: SE¼SW¼	40.00
	T. 26 N., R. 18 E., Sec. 22: NW¼NE¼	40.00
	T. 26 N., R. 18 E., Sec. 20: NW¼NW¼	40.00
	T. 26 N., R. 18 E., Sec. 19: SE¼NE¼	40.00
	T. 27 N., R. 19 E., Sec. 1: Lot 1	23.92
	T. 27 N., R. 21 E., Sec. 2: Lots 1, 2, 3, 4	186.12
	T. 27 N., R. 21 E., Sec. 3: Lots 1, 2, 8	
	T. 27 N., R. 21 E., Sec. 3: S½NW¼	80.00
	T. 27 N., R. 21 E., Sec. 1: Lots 1, 2	48.71
	T. 27 N., R. 22 E., Sec. 4: Lots 1, 2	53.44
	T. 27 N., R. 22 E., Sec. 4: E½NW¼	80.00
	T. 27 N., R. 21 E., Sec. 11: SW¼NW¼, NW¼SW¼	80.00
	Blaine County (cont.)	
	T. 27 N., R. 21 E., Sec. 1: SW¼SW¼	240.00
	T. 27 N., R. 21 E., Sec. 12: W½NW¼, SE¼NW¼, E½SW¼	
	T. 27 N., R. 22 E., Sec. 7: W½NW¼, NW¼SW¼	120.00
	T. 27 N., R. 22 E., Sec. 7: NE¼NE¼	40.00
	T. 27 N., R. 22 E., Sec. 8: E½NW¼, NE¼SW¼	120.00
	T. 27 N., R. 22 E., Sec. 9: SW¼NW¼	40.00
	T. 27 N., R. 22 E., Sec. 17: NE¼SW¼	40.00
	T. 27 N., R. 22 E., Sec. 20: SE¼NW¼	40.00
	T. 27 N., R. 22 E., Sec. 19: NW¼NW¼	320.00
	T. 27 N., R. 21 E., Sec. 24: NE¼, E½NW¼, NE¼SE¼	
	T. 27 N., R. 21 E., Sec. 23: SE¼NE¼	40.00
	T. 27 N., R. 21 E., Sec. 24: SW¼SW¼	40.00
	T. 27 N., R. 21 E., Sec. 25: S½NE¼, SE¼NW¼	120.00
	T. 27 N., R. 21 E., Sec. 26: NE¼SE¼	40.00
	Hill County	
	T. 37 N., R. 11 E., Sec. 2: Lots 5, 6, 7, 8, SW¼NE¼	114.04
	T. 37 N., R. 11 E., Sec. 19: Lot 1 (Sold)	80.31
	T. 37 N., R. 10 E., Sec. 24: NE¼NE¼	
	T. 37 N., R. 15 E., Sec. 6: Lots 9, 10	53.73
	T. 37 N., R. 15 E., Sec. 29: SE¼NE¼, NW¼SE¼	80.00
	T. 37 N., R. 17 E., Sec. 7: SE¼SE¼	40.00
	T. 35 N., R. 12 E., Sec. 18: SW¼NE¼	40.00
	T. 34 N., R. 13 E., Sec. 31: NW¼NE¼	40.00
	T. 32 N., R. 11 E., Sec. 5: Lot 1	31.64
	T. 32 N., R. 14 E., Sec. 26: N½SW¼	80.00
	T. 31 N., R. 12 E., Sec. 9: W½SE¼	80.00
	T. 30 N., R. 11 E., Sec. 1: NE¼SE¼	40.00
	T. 31 N., R. 16 E., Sec. 24: NW¼SE¼	40.00
	T. 30 N., R. 17 E., Sec. 8: NE¼SE¼	40.00
	T. 30 N., R. 17 E., Sec. 4: NW¼SE¼	40.00
	T. 30 N., R. 16 E., Sec. 35: Lot 3	17.62
	T. 30 N., R. 17 E., Sec. 29: Lot 7	8.42
	T. 30 N., R. 10 E., Sec. 1: Lot 11	17.07
	Chouteau County	
	T. 28 N., R. 13 E., Sec. 34: SE¼SW¼	40.00
	T. 24 N., R. 7 E., Sec. 4: SW¼NE¼, SE¼NW¼	80.00
	T. 27 N., R. 12 E., Sec. 10: NE¼SE¼	40.00
	T. 24 N., R. 7 E., Sec. 14: S½NW¼	80.00
	T. 25 N., R. 7 E., Sec. 34: NE¼NW¼	40.00
	T. 24 N., R. 7 E., Sec. 4: SE¼SE¼	40.00
	T. 24 N., R. 7 E., Sec. 3: SE¼NW¼, N½SW¼	120.00
	T. 24 N., R. 7 E., Sec. 3: SW¼SE¼	40.00
	T. 24 N., R. 7 E., Sec. 2: SE¼SW¼	40.00
	T. 24 N., R. 7 E., Sec. 11: NW¼SW¼	40.00
	T. 24 N., R. 7 E., Sec. 11: SE¼NE¼, NE¼SE¼	553.02
	T. 24 N., R. 7 E., Sec. 12: S½N½, N½SW¼, SW¼SW¼, NW¼SE¼	
	T. 24 N., R. 8 E., Sec. 7: Lots 1, 2, NE¼NW¼, SE¼NW¼	

List 2 (Exchange List - Doesn't Meet Criteria-Sale)

Tract No.	Location		Total Tract Acres
	Hill County		
	T. 37 N., R. 15 E., Sec. 7:	SE¼SE¼	40.00
	T. 28 N., R. 16 E., Sec. 1:	Lots 8, 13, 14	103.84
	T. 28 N., R. 16 E., Sec. 24:	Lot 4	24.71
	T. 28 N., R. 16 E., Sec. 32:	NW¼, N½SW¼	240.00
	T. 28 N., R. 16 E., Sec. 33:	N½NE¼	200.00
	T. 28 N., R. 16 E., Sec. 34:	NW¼NE¼, N½NW¼	
	T. 28 N., R. 17 E., Sec. 5:	N½SW¼	80.00
	T. 28 N., R. 17 E., Sec. 18:	SW¼SE¼	80.00
	T. 28 N., R. 17 E., Sec. 19:	NW¼NE¼	
	Chouteau County		
	T. 27 N., R. 16 E., Sec. 11:	NW¼SE¼	40.00
	T. 26 N., R. 16 E., Sec. 2:	SE¼SW¼	40.00
	T. 26 N., R. 16 E., Sec. 3:	Lot 1	39.96
	T. 26 N., R. 16 E., Sec. 3:	NE¼SE¼	40.00
	T. 26 N., R. 16 E., Sec. 9:	E½E½	760.00
	T. 26 N., R. 16 E., Sec. 10:	N½, SW¼, NW¼SE¼	
	T. 26 N., R. 16 E., Sec. 15:	NW¼, N½SW¼	
	T. 26 N., R. 16 E., Sec. 11:	NW¼SW¼	40.00
	T. 26 N., R. 16 E., Sec. 17:	E½NE¼	80.00
	T. 26 N., R. 16 E., Sec. 18:	Lot 1	34.47
	T. 26 N., R. 16 E., Sec. 30:	NE¼SE¼	40.00
	T. 26 N., R. 16 E., Sec. 32:	W½NE¼, NW¼	240.00
	T. 26 N., R. 16 E., Sec. 33:	SE¼SW¼	40.00
	T. 26 N., R. 16 E., Sec. 34:	SE¼NE¼	40.00
	T. 26 N., R. 17 E., Sec. 4:	SE¼SW¼	40.00
	T. 26 N., R. 17 E., Sec. 32:	SW¼NE¼	40.00
	T. 26 N., R. 17 E., Sec. 32:	S½SE¼	80.00
	T. 24 N., R. 16 E., Sec. 13:	SW¼NW¼	40.00
	T. 24 N., R. 16 E., Sec. 13:	NE¼SW¼	40.00
	T. 24 N., R. 16 E., Sec. 15:	NW¼SW¼	40.00
	T. 24 N., R. 16 E., Sec. 17:	NE¼NW¼	40.00
	T. 24 N., R. 16 E., Sec. 18:	Lot 2	28.84
	T. 24 N., R. 16 E., Sec. 20:	NE¼SE¼	40.00
	T. 24 N., R. 16 E., Sec. 21:	SW¼SW¼	40.00
	T. 24 N., R. 16 E., Sec. 21:	W½NE¼	80.00
	T. 24 N., R. 16 E., Sec. 33:	SE¼NW¼	40.00
	T. 23 N., R. 16 E., Sec. 4:	Lot 2	39.83
	T. 23 N., R. 16 E., Sec. 5:	Lot 2, S½N½, NE¼SW¼, NW¼SE¼	279.96
	T. 23 N., R. 15 E., Sec. 12:	SE¼NW¼, NE¼SW¼, W½SE¼	651.45
	T. 23 N., R. 15 E., Sec. 13:	NE¼	
	T. 23 N., R. 16 E., Sec. 17:	NW¼	
	T. 23 N., R. 16 E., Sec. 18:	Lots 1, 2, 3, E½NE¼	
	T. 23 N., R. 15 E., Sec. 13:	NW¼SW¼	40.00
	T. 23 N., R. 15 E., Sec. 14:	NE¼	160.00
	T. 26 N., R. 13 E., Sec. 5:	SW¼SE¼	40.00
	T. 26 N., R. 13 E., Sec. 8:	NE¼SW¼	40.00
	T. 26 N., R. 13 E., Sec. 17:	NE¼NW¼	40.00
	T. 26 N., R. 13 E., Sec. 17:	N½SW¼	80.00
	T. 26 N., R. 13 E., Sec. 17:	NE¼SE¼	40.00
	T. 26 N., R. 13 E., Sec. 18:	W½SE¼	80.00
	T. 25 N., R. 13 E., Sec. 1:	SE¼NW¼	40.00
	T. 27 N., R. 12 E., Sec. 31:	Lot 3	38.04
	T. 26 N., R. 11 E., Sec. 8:	SW¼NE¼, S½NW¼	120.00
	T. 26 N., R. 11 E., Sec. 17:	NE¼SE¼	40.00
	T. 26 N., R. 11 E., Sec. 18:	Lot 1	37.67
	T. 25 N., R. 10 E., Sec. 5:	SW¼NW¼	40.00
	T. 25 N., R. 10 E., Sec. 19:	SE¼SW¼	80.00
	T. 25 N., R. 10 E., Sec. 30:	NE¼NW¼	
	T. 25 N., R. 9 E., Sec. 23:	N½NE¼	120.00
	T. 25 N., R. 9 E., Sec. 24:	NW¼NW¼	120.00
	T. 25 N., R. 9 E., Sec. 23:	SE¼NW¼	40.00
	T. 25 N., R. 9 E., Sec. 24:	NE¼SW¼	40.00
	T. 26 N., R. 9 E., Sec. 35:	NE¼NE¼	40.00
	T. 24 N., R. 8 E., Sec. 4:	Lots 1, 2, NW¼NE¼	125.78
	T. 24 N., R. 8 E., Sec. 32:	SW¼SW¼	40.00
	T. 24 N., R. 8 E., Sec. 32:	Lot 2	26.34
	T. 26 N., R. 8 E., Sec. 28:	N½NW¼	80.00
	T. 26 N., R. 7 E., Sec. 11:	NE¼NE¼	40.00

Tract No.	Location		Total Tract Acres
	Chouteau County (cont.)		
	T. 27 N., R. 8 E., Sec. 6:	Lots 1, 2, 3, 4, 5, 6, 7, E½W½, E½	1,890.81
	T. 27 N., R. 8 E., Sec. 7:	N½NE¼, NE¼NW¼	
	T. 27 N., R. 8 E., Sec. 8:	W½	
	T. 28 N., R. 8 E., Sec. 29:	SE¼SE¼	
	T. 28 N., R. 8 E., Sec. 31:	Lot 4, E½SW¼, SE¼	
	T. 28 N., R. 8 E., Sec. 32:	NE¼, S½NW¼, SW¼	
	Blaine County		
	T. 37 N., R. 17 E., Sec. 2:	SE¼	1,080.00
	T. 37 N., R. 17 E., Sec. 10:	E½, E½NW¼	
	T. 37 N., R. 17 E., Sec. 11:	N½, SW¼	
	T. 37 N., R. 17 E., Sec. 12:	SW¼SW¼	40.00
	T. 37 N., R. 17 E., Sec. 26:	S½SW¼	640.00
	T. 37 N., R. 17 E., Sec. 34:	E½E½, NW¼NE¼, N½NW¼, SW¼NW¼	
	T. 37 N., R. 17 E., Sec. 35:	NW¼, N½SW¼	
	T. 36 N., R. 17 E., Sec. 10:	W½SW¼	160.00
	T. 36 N., R. 17 E., Sec. 15:	N½NW¼	
	T. 36 N., R. 17 E., Sec. 11:	S½NW¼	80.00
	* - Lands are withdrawn for Power Site		
	T. 35 N., R. 17 E., Sec. 1:	Lots 1, 2, 3, 4, S½N½	320.48
	T. 35 N., R. 17 E., Sec. 26:	All	1,280.00
	T. 35 N., R. 17 E., Sec. 27:	S½	
	T. 35 N., R. 17 E., Sec. 35:	N½	
	T. 37 N., R. 18 E., Sec. 2:	Lots 4, 9, 10, 11, 12, S½N½, S½	891.28
	T. 37 N., R. 18 E., Sec. 3:	Lots 1, 2, 3, 4, S½N½	
	T. 37 N., R. 18 E., Sec. 10:	S½ SE¼	320.00
	T. 36 N., R. 18 E., Sec. 31:	Lots 1, 2, E½NW¼, NE¼	
	T. 36 N., R. 18 E., Sec. 30:	Lots 3, 4, E½SW¼,	646.44
	T. 35 N., R. 18 E., Sec. 22:	NE¼	160.00
	T. 35 N., R. 18 E., Sec. 26:	NE¼	160.00
	T. 35 N., R. 18 E., Sec. 35:	N½N½, S½NE¼, N½SE¼	320.00
	T. 34 N., R. 18 E., Sec. 4:	SW¼NE¼	40.00
	T. 36 N., R. 19 E., Sec. 25:	W½	320.00
	T. 35 N., R. 19 E., Sec. 27:	NE¼SE¼	40.00
	T. 35 N., R. 19 E., Sec. 34:	S½SE¼	720.00
	T. 35 N., R. 19 E., Sec. 35:	All	
	T. 34 N., R. 19 E., Sec. 2:	Lots 1, 2, 3, 4 S½N½	
	T. 34 N., R. 19 E., Sec. 17:	NE¼NW¼	40.00
	T. 36 N., R. 20 E., Sec. 18:	NE¼	160.00
	T. 36 N., R. 20 E., Sec. 1:	Lots 1, 2, S½NE¼, SE¼	1,280.82
	T. 36 N., R. 20 E., Sec. 12:	All	
	T. 36 N., R. 20 E., Sec. 13:	W½	
	T. 36 N., R. 21 E., Sec. 6:	Lot 5	45.84
	T. 35 N., R. 20 E., Sec. 34:	S½	1,603.28
	T. 34 N., R. 20 E., Sec. 3:	Lots 1, 2, 3, 4, S½N½, S½	
	T. 34 N., R. 20 E., Sec. 2:	S½	
	T. 34 N., R. 20 E., Sec. 11:	E½	
	T. 34 N., R. 20 E., Sec. 22:	N½	320.00
	T. 33 N., R. 20 E., Sec. 9:	SE¼	160.00
	T. 33 N., R. 20 E., Sec. 20:	E½SE¼	80.00
	T. 37 N., R. 21 E., Sec. 10:	SE¼	240.00
	T. 37 N., R. 21 E., Sec. 15:	N½NE¼	
	T. 35 N., R. 21 E., Sec. 5:	S½NE¼, E½SW¼, SE¼	640.00
	T. 35 N., R. 21 E., Sec. 8:	N½	
	T. 35 N., R. 21 E., Sec. 21:	W½	640.00
	T. 35 N., R. 21 E., Sec. 28:	W½	
	T. 35 N., R. 21 E., Sec. 27:	W½W½, E½SW¼	320.00
	T. 35 N., R. 21 E., Sec. 34:	W½NW¼	
	T. 35 N., R. 21 E., Sec. 26:	SE¼SE¼	160.00
	T. 35 N., R. 21 E., Sec. 35:	E½NE¼, NE¼SE¼	
	T. 33 N., R. 21 E., Sec. 9:	W½	320.00

List 2, Contd.

Tract No.	Location		Total Tract Acres
	Blaine County (cont.)		
	T. 33 N., R. 21 E., Sec. 29:	N½NE¼, NE¼NW¼	160.00
	T. 33 N., R. 21 E., Sec. 28:	NW¼NW¼	
	T. 33 N., R. 21 E., Sec. 27:	NW¼	320.00
	T. 33 N., R. 21 E., Sec. 28:	NW¼	
	T. 35 N., R. 22 E., Sec. 30:	Lots 3, 4, SW¼NE¼, E½SW¼, W½SE¼, SE¼SE¼	783.95
	T. 35 N., R. 22 E., Sec. 31:	Lots 1, 2, E½NW¼, NE¼	
	T. 35 N., R. 22 E., Sec. 32:	W½W½	
	T. 35 N., R. 22 E., Sec. 33:	E½E½	480.00
	T. 35 N., R. 22 E., Sec. 34:	W½	
	T. 35 N., R. 22 E., Sec. 35:	SW¼SW¼	40.00
	T. 35 N., R. 22 E., Sec. 35:	SW¼SE¼	40.00
	T. 34 N., R. 22 E., Sec. 13:	W½W½	160.00
	T. 34 N., R. 22 E., Sec. 23:	N½	320.00
	T. 34 N., R. 22 E., Sec. 24:	E½	669.52
	T. 34 N., R. 23 E., Sec. 18:	Lots 3, 4, SE¼NW¼, E½SW¼	
	T. 34 N., R. 23 E., Sec. 19:	Lots 1, 2, 3, NE¼NW¼	
	T. 34 N., R. 22 E., Sec. 26:	NW¼, N½SW¼	240.00
	T. 33 N., R. 23 E., Sec. 6:	Lots 3, 4, W½SW¼, SE¼	322.11
	T. 36 N., R. 24 E., Sec. 14:	N½NW¼, SW¼NW¼	120.00
	T. 35 N., R. 25 E., Sec. 21:	E½	400.00
	T. 35 N., R. 25 E., Sec. 22:	W½NW¼	
	T. 33 N., R. 26 E., Sec. 6:	Lots 1, 2, S½NE¼, SE¼	320.96
	T. 33 N., R. 24 E., Sec. 29:	S½	320.00
	T. 32 N., R. 23 E., Sec. 4:	SE¼NE¼	40.00
	T. 32 N., R. 25 E., Sec. 34:	E½	640.00
	T. 32 N., R. 25 E., Sec. 35:	S½	
	T. 32 N., R. 25 E., Sec. 32:	SW¼NW¼, NW¼SW¼	80.00
	T. 31 N., R. 25 E., Sec. 5:	N½SW¼	80.00
	T. 31 N., R. 25 E., Sec. 6:	SW¼SE¼	40.00
	T. 31 N., R. 25 E., Sec. 8:	NW¼NW¼	40.00
	T. 31 N., R. 25 E., Sec. 9:	E½NE¼	160.00
	T. 31 N., R. 25 E., Sec. 10:	W½NW¼	
	T. 31 N., R. 25 E., Sec. 10:	NE¼, NW¼SE¼	200.00
	T. 31 N., R. 25 E., Sec. 11:	SE¼SW¼	40.00
	T. 30 N., R. 21 E., Sec. 1:	Lots 1, 2, 3, 4, S½NE¼, SE¼NW¼, SE¼	2,233.27
	T. 30 N., R. 21 E., Sec. 2:	Lot 1	
	T. 30 N., R. 21 E., Sec. 12:	N½NE¼, SW¼NE¼, NW¼SE¼	
	T. 30 N., R. 22 E., Sec. 4:	Lots 12, 13, 14, 15	
	T. 30 N., R. 22 E., Sec. 5:	S½SW¼, SE¼	
	T. 30 N., R. 22 E., Sec. 6:	SE¼SW¼, SE¼	
	T. 30 N., R. 22 E., Sec. 7:	N½, N½SE¼	
	T. 30 N., R. 22 E., Sec. 8:	All	
	T. 30 N., R. 22 E., Sec. 9:	Lots 9, 10, 11, 12	
	T. 27 N., R. 22 E., Sec. 31:	W½SE¼	80.00
**	T. 27 N., R. 21 E., Sec. 33:	SE¼NE¼, N½SE¼	560.00
	T. 27 N., R. 21 E., Sec. 34:	NE¼, S½NW¼, N½NE¼, N½SE¼, SE¼SE¼	
	T. 28 N., R. 19 E., Sec. 26:	SW¼SW¼	240.00
	T. 28 N., R. 19 E., Sec. 27:	SE¼SE¼	
	T. 28 N., R. 19 E., Sec. 35:	W½W½	
	T. 27 N., R. 19 E., Sec. 1:	Lot 5, SW¼NW¼	272.22
	T. 27 N., R. 19 E., Sec. 2:	Lots 1, 2, 3, 7, 8, SE¼NE¼	
	T. 27 N., R. 19 E., Sec. 17:	SW¼NE¼, SE¼NW¼	80.00
	T. 27 N., R. 18 E., Sec. 25:	SE¼SE¼	40.00
	T. 27 N., R. 20 E., Sec. 20:	S½NE¼	80.00
	T. 26 N., R. 19 E., Sec. 7:	NE¼SE¼	40.00
	T. 26 N., R. 18 E., Sec. 19:	SE¼SW¼	40.00
	T. 26 N., R. 18 E., Sec. 30:	Lots 1, 2	78.70
	T. 26 N., R. 17 E., Sec. 22:	NW¼	160.00
	T. 26 N., R. 17 E., Sec. 25:	NE¼NW¼	40.00
	T. 26 N., R. 17 E., Sec. 23:	SW¼SE¼	680.00
	T. 26 N., R. 17 E., Sec. 26:	W½E½, SE¼NE¼, NW¼, N½SW¼, SW¼SW¼	
	T. 26 N., R. 17 E., Sec. 27:	SE¼NE¼, N½SE¼, SE¼SE¼	
	T. 26 N., R. 17 E., Sec. 35:	NW¼NE¼	
	T. 26 N., R. 17 E., Sec. 35:	S½NW¼	80.00
	T. 25 N., R. 17 E., Sec. 1:	SW¼NE¼	40.00
	T. 25 N., R. 18 E., Sec. 6:	Lots 1, 2, S½NE¼	164.36
	T. 25 N., R. 18 E., Sec. 3:	SW¼SW¼	120.00
	T. 25 N., R. 18 E., Sec. 4:	E½SE¼	
	T. 25 N., R. 18 E., Sec. 15:	E½	320.00
	T. 25 N., R. 18 E., Sec. 20:	SE¼NE¼, NE¼SE¼	80.00
	T. 25 N., R. 18 E., Sec. 27:	SW¼NW¼, W½SW¼	760.00
	T. 25 N., R. 18 E., Sec. 28:	NW¼NE¼, S½NE¼, NE¼SW¼, S½SW¼, SE¼	
	T. 25 N., R. 18 E., Sec. 33:	N½NE¼, NE¼NW¼	
	T. 25 N., R. 18 E., Sec. 34:	NW¼NW¼	
	T. 25 N., R. 18 E., Sec. 32:	E½NE¼	80.00
	T. 24 N., R. 18 E., Sec. 25:	SE¼NE¼	40.00
	T. 36 N., R. 22 E., Sec. 19:	Lot 3	33.23
	T. 36 N., R. 22 E., Sec. 20:	NW¼NW¼	40.00
	T. 36 N., R. 20 E., Sec. 10:	NE¼NW¼	40.00
	T. 36 N., R. 20 E., Sec. 11:	W½	320.00
	T. 36 N., R. 26 E., Sec. 19:	W½NW¼, SW¼NW¼	120.00
	T. 34 N., R. 22 E., Sec. 32:	NW¼ N½SE¼	320.00
	T. 34 N., R. 22 E., Sec. 33:	W½SW¼	
		TOTAL	34,428.16

** - Lands are withdrawn for Coal

Appendix 1.3

Reasonably Foreseeable Development of Oil & Gas Resources

This appendix presents an in-depth description of the oil and gas leasing and development program in the West HiLine planning area. In particular, it addresses reasonably foreseeable oil and gas development, under the direction provided in the Management Common to All Alternatives section, during the life of the plan and the cumulative impacts of leasing and development. This information supplements the management guidance and information presented in Chapters 2, 3 and 4. This appendix has been analyzed in conjunction with the information presented in the body of the RMP in determining the BLM's proposed alternative.

The RMP will determine which lands will be leased for oil and gas under what conditions; and those areas where leasing for oil and gas will be restricted or not undertaken. Issued oil and gas leases may be explored and developed, subject to lease stipulations, after additional site specific analysis for conformance with this plan and additional NEPA analysis, as needed.

The BLM will consider this information again prior to issuing a Record of Decision.

A. OIL AND GAS LEASING

The Mineral Leasing Act of 1920 (as amended), provides that all public lands be open to oil and gas leasing unless a specific land order has been issued to close the area. Through the Bureau's land use planning system, the availability of public land for leasing is analyzed and constraints on leasing and oil and gas operations are identified. Oil and gas leases are then issued from the Montana State Office in Billings.

The issuance of a lease authorizes the lessee to actively explore and/or develop the lease, guided by any attached stipulations. Stipulations serve to point out areas of special concern. Time, distance, and surface occupancy stipulations are common lease restrictions used to protect surface resources.

Occasionally, stipulations protecting the mineral resource from drainage or requiring the new lessee to assume responsibility for any unplugged wells on a lease are added to protect mineral resources.

Standard stipulations (form MT 3109-1 July, 1984, in Appendix 2.2) are attached to all leases prior to issuance to provide minimum guidelines. In addition, certain areas may be designated for special stipulations. These special stipulations would be attached, for those designated lands, prior to lease offering. Additional site specific stipulations could be developed, consistent with this RMP, during the

field office evaluation of the Application for Permit to Drill (APD). Additional National Environmental Policy Act (NEPA) analysis and documentation would occur on these APDs as necessary.

The East, Middle and West Buttes of the Sweet Grass Hills, Kevin Rim, and Cow Creek ACECs and other important wildlife habitat areas may require application of restrictive (seasonal or timing) stipulations (see Appendix 2.2 and the minerals overlay to Map 1) to protect important habitats. The Upper Missouri National Wild and Scenic River Corridor is discretionarily closed to leasing in the scenic and recreational segments; and nondiscretionarily closed to leasing in the wild segments. If in the future, the Secretary of the Interior develops regulations for leasing in the Upper Missouri River Corridor analyses would be conducted to determine the level of protection and to develop stipulations necessary to minimize surface and visual impacts.

Drilling and exploration activities on federal lands open to oil and gas leasing in the RMP planning area, are administered by the Havre and Great Falls Resource Area Offices, both under the guidance of the Lewistown District Office.

A federal lessee or operator is required to follow procedures set forth by: Onshore Oil and Gas Order No. 1, The Conservation Division Manuals (as amended), the Federal Oil and Gas Royalty Management Act (as amended) and Title 43 Code of Federal Regulations, Section 3100.

The following sections describe typical oil and gas operations for the West HiLine planning area.

B. OIL AND GAS OPERATIONS

1. Geophysical Exploration

Geophysical exploration is a general term used for various indirect exploration methods, the most common being seismic and gravity surveys. Gravitational prospecting detects micro-variations in gravitational attraction caused by the differences in the density of various types of rock through the use of an instrument known as a gravimeter. Data derived from gravity surveys is used to generate anomaly maps, from which faults and general structural trends can be interpreted. Survey measurements are taken at many points along a linear path with a gravimeter. The gravimeter is transported either by backpack, helicopter, or off-road vehicle (ORV). Because gravity surveys can be conducted from the air or by a backpacker, surface disturbance is not necessary. However, surface disturbance may occur if ORV use is permitted for the purpose of conducting the survey.

Seismic surveys are the most popular indirect method currently utilized for locating subsurface structures which may contain oil and gases. Seismic prospecting is based on the fact that shock waves (waves similar to those created when a pebble is dropped into a pool of standing water) are reflected, refracted (bent) to varying degrees and travel at different speeds as they pass through different rock types. As the shock wave encounters layers where the lower rock unit causes the waves to travel slower, some of the wave (energy) is reflected upward to surface sensing devices called geophones.

The geophones are connected by ground wire to a data recording truck which stores data on magnetic tape. The time required for the waves to travel from the source of the wave down to a given reflecting rock unit and back to the geophone is related to the depth by multiplying the shock wave velocity by one half the travel time. For different rock types the average velocity is determined from bore hole and core data or must be estimated if no data is available.

Seismic surveys are conducted by sending shock waves, generated by a small explosion or through mechanically beating the ground surface with a thumping or vibrating platform, through the earth's surface.

The thumper and vibrator methods pound or vibrate the ground surface to create a shock wave. Usually four large trucks are used, each equipped with pads about 4-foot square. The pads are lowered to the ground and the vibrators are electronically triggered from the recording truck. Once information is recorded the trucks move forward a short distance and the process is repeated. Less than 50 square feet of surface area is required to operate the equipment at each recording site.

The small explosive method requires that charges be detonated on the surface or in a drill hole. Holes for the charges are drilled utilizing truck-mounted or air portable drills to drill small-diameter holes to depths of 100 to 200 feet. Generally 4 to 12 holes are drilled per mile of line and a 50-pound charge of explosives is placed in the hole, covered, and detonated. The created shock wave is recorded by geophones placed in a linear fashion on the surface. In rugged topography, a portable drill carried in by helicopter is often used to drill the holes rather than a truck-mounted drill.

The surface charge method utilizes 2 1/2 or 5 pound charges attached to wooden lath 3 feet above the ground surface. This type of charge results in the destruction of above ground vegetation, but this damage is usually undetectable after several growing seasons. The disadvantage of this type charge is its limited depth of shock wave penetration.

A typical drilling seismic operation may utilize 10 to 15 men operating five to seven trucks. Under normal conditions, 3 to 5 miles of line can be surveyed each day using the explosive method. The vehicles used for a drilling program may include heavy truck-mounted drill rigs, track mounted air rigs, water trucks, a computer recording truck, and several light pickups for the surveyors, shot hole crew, geophone crew, permit man, and party chief.

Public roads and existing private roads and trails are used where possible. However, off-road cross-country travel is also necessary in some cases. Graders and dozers may be required to provide access to remote areas. Several trips a day are made along a seismograph line; this usually establishes a well defined 2-track trail. Drilling water, when needed, is usually obtained from private landowners.

Terrain along the HiLine region is of the type which allows the use of thumpers or vibrotrucks. Therefore, geophysical exploration in this region should be accomplished with minimal surface disturbance.

2. Geophysical Operations

Geophysical operations may be conducted regardless of whether the land is leased or not. Notices of Staking, Applications for Permit to Drill, drilling activities and subsequent well operations can only be approved, subject to regulations, on leased lands.

Notices to conduct geophysical operations on BLM surface are received by the appropriate resource area. Administration and surface protection are accomplished through close cooperation of the operator and the BLM. Seasonal restrictions may be imposed to reduce fire hazards, conflicts with wildlife, watershed damage, hunting activity, etc.

An operator is required to file a "Notice of Intent to Conduct Oil and Gas Exploration Operations" for all geophysical activities on public lands administered by the BLM. The Notice of Intent, should include maps showing the line location and access routes, any anticipated surface damages and a time frame for operations. The operator must be bonded.

Written approval must be obtained prior to commencing any surface blading activities and the operator must contact the BLM when operations begin. The operator is required to comply with written instructions and orders given by the Authorized Officer at the prework conference, site inspection (if required) and during field investigations. Periodic checks during and upon

completion of the operation will be conducted to ensure compliance with the terms of the Notice of Intent.

Oil and gas can be discovered by either direct or indirect exploration methods. Direct exploration methods such as the mapping of rock outcrops and oil seeps, drill core analyses and drilling may lead to the discovery of oil and gas deposits whereas indirect methods, such as seismic and gravity surveys are used to delineate subsurface features which may contain oil and gas.

3. Drilling Permit Process

The federal lessee or operating company selects a drill site based on spacing requirements, subsurface and surface geology, geophysics, topography, and economic considerations. Statewide spacing regulations are established by the Montana State Board of Oil and Gas Conservation and are generally as follows:

Gas Wells: One well per 640 acres.
Oil Wells: 0 - 6000 feet: One well per 40 acres.
6001 - 11000 feet: One well per 160 acres.
11001 - feet: One well per 320 acres.

Exceptions to spacing requirements involving federal lands may be granted after a BLM review.

4. Notice of Staking (NOS)

Once the company makes the decision to drill, they must decide whether to submit a Notice of Staking (NOS) or apply directly for a permit to drill. The NOS is an outline of what the company intends to do, including a location map and sketched site plan. The NOS is used to review any conflicts with known critical resource values. The BLM utilizes information contained in the NOS and obtained from the onsite inspection to develop stipulations to be incorporated into the APD. As a result of the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act of 1987), upon receipt of an NOS the operator/company name, well name/number, well location and a map showing the drill site must be posted in a public place in the Bureau approving office and the Bureau Resource Area Office or the local surface management agency office for a minimum of 30 days prior to approving the APD.

5. Application for Permit to Drill (APD)

The operator may or may not choose to submit an NOS; in either case, an Application for Permit to Drill must be submitted. An APD consists of two main parts: the 13 point surface plan which

describes any surface disturbances and is reviewed by resource specialist, and the eight point plan which details the drilling program and is reviewed by the petroleum engineer and geologist. For the APD option the onsite inspection is used to assess possible impacts and develop stipulations to minimize these impacts. If the NOS option is not utilized the 30 day posting period as required by the Reform Act of 1987, will commence upon receipt of the APD by the BLM.

In the HiLine region, an archaeological clearance is required. However, there may be exceptions to this policy on a case by case basis. Additionally, the BLM must prepare any site specific environmental documentation required by NEPA and develop mitigation measures necessary to protect any adversely affected resources. The BLM approves all wells drilled on federal minerals regardless of surface ownership, except on National Forest Lands where the BLM only approves the eight point drilling program. The BLM also approves wells drilled on leased Indian tribal or allotted lands, but has no control over Indian leasing decisions. For privately owned surfaces it is the responsibility of the operator to obtain a surface owner agreement.

6. Drilling Phase

Once the APD is approved, the operator may begin construction activities. When a site is chosen that necessitates the construction of an access road the length will vary, but usually the shortest feasible route is selected to reduce the haul distance and construction costs. Environmental factors or a landowner's wishes may dictate a longer route in some cases.

During this first phase the operator moves construction equipment over existing roads to the point where the access road begins. Depending upon the type of terrain, equipment may include dozers (track-mounted and rubber-tired) scrapers and graders. Existing roads and trails often require improvement in places and occasionally culverts and cattle guards are installed. Because of the topography, and because most HiLine wells are only 1,500 to 2,200 feet deep they can be drilled using a truck mounted rig. Thus, often times very little or no access road work is necessary and this phase of construction requires very little time.

The second phase is the construction of the drilling pad or platform. Again, in much of the HiLine area the relatively flat, grassland topography requires little work to prepare a drill pad. In some cases no disturbance other than a mud (reserve) pit and cellar is required. If surface disturbance is necessary, soil material suitable for plant growth is removed and stockpiled in a designated area, to be used later for rehabilitation and

reseeding. Drilling sites on ridge tops and hillsides are constructed by cutting and filling portions of the location after the topsoil has been removed. The majority of the excess cut material is stockpiled in an area that will allow it to be easily recovered for rehabilitation. It is important to confine extra cut material to a stockpile so that it can be recovered for rehabilitation of the drill site.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig, but is usually 200 feet by 250 feet for typical HiLine wells of 1,500 to 2,200 foot depths. Deeper wells will require larger pads because of the rig size and associated equipment. When construction of a drilling location requires cut and fill, the foundation of the drilling derrick is usually placed on a cut surface ensuring that it rests on solid ground, thereby preventing it from leaning or toppling due to settling of uncompacted soil.

In addition to the drilling platform, a reserve pit is constructed. The reserve pit is used to contain the drilling fluids and drill hole cuttings. It is usually square or oblong, but is sometimes constructed in other shapes to accommodate topography. Generally, the reserve pit is 6 to 12 feet deep, but may be deeper to compensate for smaller length and width for deeper drilling depths. In some instances mud tanks are utilized thus eliminating the need for a pit. For air drilling, smaller reserve pits are used; usually less than 10 by 10 feet and approximately 6 to 10 feet in depth.

Depending on how the drill site is located relative to a natural drainage, it may be necessary to construct water bars or diversions to control surface runoff and erosion. The area disturbed for construction and the potential for successful revegetation depends largely on topography, soil type, climate and the degree of disturbance.

Usually drilling activities begin shortly after the location and access road have been constructed. The drilling rig and associated equipment are moved to the location and erected.

Water for drilling is hauled or piped to the rig storage tanks or reserve pit from rivers, wells, reservoirs or private sources. Occasionally, water supply wells are drilled on or close to the drill site. Bentonite, a type of clay, is mixed with the water to form the main constituent of the drilling mud. A wide variety of other materials and chemicals may be added to enhance the mud properties. Drilling mud performs several important functions; it cools the bit, reduces the drag of the drill pipe on the sides of the bore hole, seals off any porous zones, aids in preventing an uncontrolled release of formation fluids, and carries the

cuttings to the surface. High pressure air is sometimes used in place of mud. The use of mud or air is largely dependent upon the target formation, drilling depth and type of completion desired. The drilling mud or air is circulated through the drill pipe to the bottom of the hole, through the bit and up the well bore. At the surface the mud and rock cuttings are returned to the reserve pit where gravity separates the two or they are mechanically separated through a screen. The mud is recycled and returned to the system for further use. When drilling with air the cuttings are blown into the reserve pit. Drilling muds are not allowed to contain any hazardous or toxic substances.

The actual commencement of the drilling is referred to as "spudding in". Initially, the drilling usually proceeds rapidly due to the unconsolidated nature of shallow formations.

Drilling is accomplished by rotating special bits bearing a controlled portion of the drill string weight. The rig structure and associated hoisting equipment bear the remainder of the drill string's weight. The weight on the bit is controlled to maintain as vertical a hole as possible or deviate from vertical when desired, and to prevent rapid wearing of the drill bit.

The combination of rotary motion and weight on the bit causes rock to be chipped away at the bottom of the hole. As mentioned earlier, these chips are then transported to the surface where they are disposed of into the reserve pit.

The rotary motion is created by a square or hexagonal rod, called a kelly, which fits through a square or hexagonal hole in a large turntable, called a rotary table. The rotary table sits on the drilling rig floor and as the hole is deepened the kelly descends. When the kelly has gone as deep as it can, it is raised and a piece of drill pipe about 30 feet in length is attached to the drill pipe in the hole. The drill pipe is then lowered, the kelly is raised and attached to the top of it, and drilling recommences. By adding more and more drill pipe the hole is steadily deepened.

Eventually, the bit becomes worn and must be replaced. To change bits, the entire string of drill pipe must be pulled from the hole. Once the bit is replaced the drill string is reassembled, lowered into the hole and drilling is started again.

Drilling operations are continuous, 24 hours a day, 7 days a week. The crews usually work three 8-hour shifts or two 12-hour shifts a day. Typical HiLine wells require 3 to 4 days to reach total depth. At periodic intervals, BLM personnel, usually petroleum engineering technicians, (PETs), will conduct inspections of the drilling rig and operations to ensure

compliance with the approved plans in the APD. If at any time the operator wishes to change the approved plans in the APD, verbal approval may be obtained, but must be followed up in writing.

Upon completion of drilling, the well is tested to determine its capability to produce hydrocarbons (oil and gas). If oil or gas is found in commercial quantities the well is completed as a producer. Typically, oil producing wells in the HiLine region require a pump jack, stock tanks, heat treating facilities and usually a water disposal pit. Gas wells in this region are mostly "sweet gas" wells, that is, they contain no hydrogen sulfide gas. Sweet gas production requires a meter house and a gathering line or marketing line to transport the gas. In some cases a compressor station is required to compress the gas to a pressure necessary for entry into a pipeline.

If liquid hydrocarbons (condensates) are produced with the gas a separator and storage facility are necessary. Gas wells which produce water require a small (10 by 10 foot) water disposal pit. Sour gas wells (those which produce hydrogen sulfide gas) require special wellhead equipment due to the corrosive nature of the hydrogen sulfide. The sour gas may be treated to remove any hydrogen sulfide prior to entry into a sales pipeline, but in most cases is sold to a gas plant for treatment.

Installation of production facilities generally requires little additional surface disturbance beyond that necessary for drilling. However, additional disturbance does result from pipeline and gathering line installations. Gas meter houses are usually 10 by 10 foot skid-mounted, steel sheds. Pumpjacks in this area are usually 8-10 foot in height, require a slightly larger surface area than a gas shack and may or may not be skid mounted. The gas house and pumpjack are usually situated over the well head on the same area where the drill rig was set up. Water disposal pits needed for the evaporation of water produced in association with hydrocarbons generally fit within the boundaries of the drilling pad. After the production facilities are installed the remaining drilling disturbances are reclaimed.

During the production phase, BLM monitors and approves field activities needed for well and field operation and regulation. Many operations, e.g. plugging, completion in a different zone, deepening, etc., require prior approval. Others such as acidizing and fracturing do not require prior approval, but a subsequent report of operations describing the operation in detail must be filed.

If the well is not productive in commercial quantities it is considered a dry hole. Dry holes and producing wells which can no longer produce in commercial quantities must be plugged and abandoned.

7. Plugging and Abandonment

When a well is no longer capable of producing in paying quantities or has no other beneficial use, the well should be plugged and abandoned.

The BLM is responsible for the protection of federal minerals, regardless of the surface management agency or private ownership of the surface.

Because each well is different, the plugging program for that well must be carefully designed. Federal minerals plugging programs are designed to:

(a) Prevent fluid migration between zones.
(b) Protect mineral resources from damage
(c) Isolate producing zones.

After the physical plugging is completed, the surface is reclaimed, per stipulations in the APD or the surface owner agreement.

Economic conditions dramatically affect drilling activity and at the present time oil and gas markets are depressed. However, an upturn in the petroleum market could create a significant increase in the number of drilling wells within the planning area as a great portion of the area has moderate to high oil and gas potential. The following sections briefly describe the planning areas historical, present and reasonably foreseeable oil and gas development.

C. Historical and Current Background

As with most parts of Montana underlain by sedimentary rock, the West HiLine planning area has a long history of oil and gas exploration and development. Production throughout the planning area is mainly from shallow, low pressure reservoirs of Cretaceous and older age. Most of the area's oil production occurs in Glacier and Toole Counties, whereas gas production occurs throughout the HiLine area. Table 1 lists, by county, the major oil and gas fields within the West HiLine planning area.

TABLE 1

Major Oil and Gas Fields (By County)

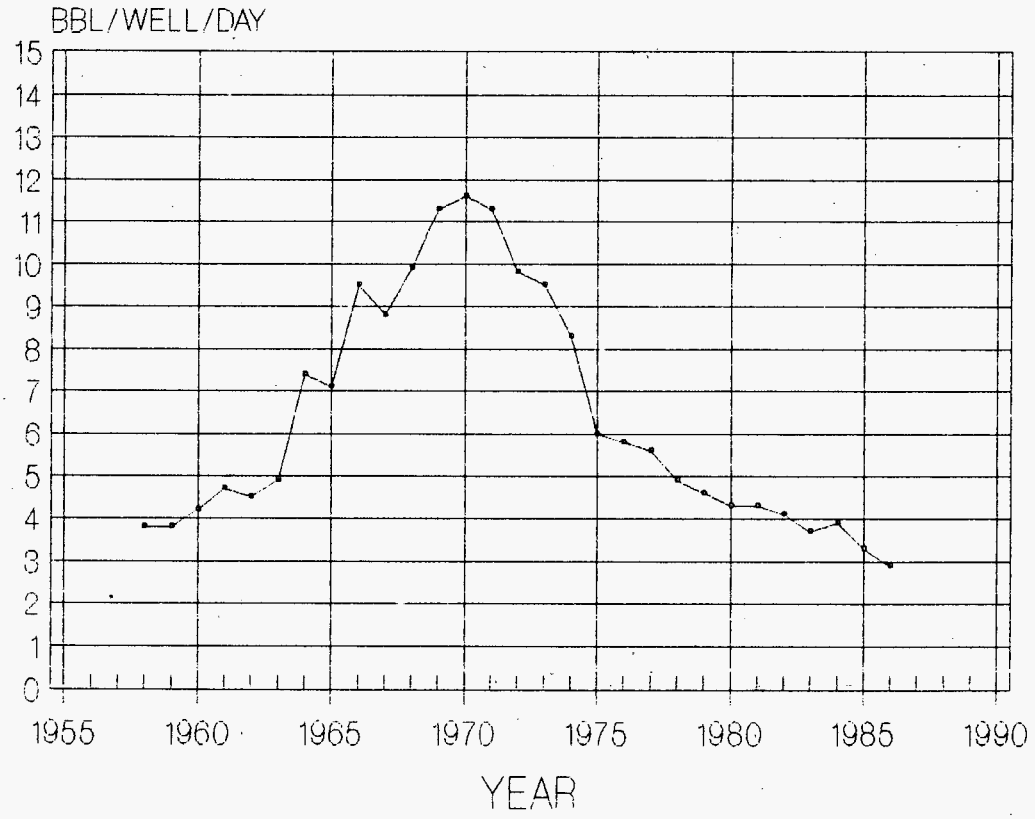
County	Field	Production	Discovery Date
Blaine	Battle Creek Field	Gas	1977
	Bullwhacker	Gas	1967
	Leroy	Gas	1968
	Sawtooth Mountain	Gas	1967
	Tiger Ridge	Gas	1966
	Tiger Ridge North	Gas	1966
	Rabbit Hills	Oil	1972
	Bowes Dome	Oil	1949
	Bullhook	Gas	1966
Chouteau	Sherard	Gas	1923
	Bullwhacker	Gas	1966
	Huebschwerlen	Gas	
Glacier	Cut Bank	Gas, Oil	1926/1932
Hill	Tiger Ridge	Gas	1966
	Bullhook	Gas	1966
Liberty	Blackjack	Gas	1968
	East Keith	Gas	1947
	Flat Coulee	Gas, Oil	1933
	O'Briens Coulee	Gas	1963
	Sage Creek	Gas	1975
	Utopia	Oil	1976
	Whitlash	Gas, Oil	1918
Toole	Kevin Sunburst	Gas, Oil	1922
	Cut Bank	Gas, Oil	1926/1932
	Fred and George Creek	Oil	1963
	Border	Oil	1929
	Amanda	Gas	1922
	Arch Apex	Gas	
	N. Dunkirk	Gas	
	Dunkirk	Gas	1981
	Prairie Del.	Gas	1975
	West Butte	Gas, Oil	1968

Source: BLM, 1988

The oldest and largest oil fields in the HiLine region, the Kevin Sunburst and Cut Bank fields, were discovered in 1922 and 1932 respectively. Since that time cumulative production from these fields exceeds 230,000,000 barrels of oil and 550,000,000,000 cubic feet of gas.

Although enhanced recovery techniques (mainly water flooding) have been tried since becoming technologically feasible; large cooperative efforts, e.g. secondary recovery units, did not get under way until the early 1960s. Figure 1, an oil production curve for the Northern Montana Region and Table 2, which shows oil production volumes for the Northern Montana region, illustrate the increased average daily production resulting from these secondary recovery efforts. The production figures (Table 1 and Figure 1) from these secondary recovery efforts show an increase through 1970. The decline shown after that is because most of these wells are in the declining stages of production.

FIGURE 1: NORTHERN MONTANA REGION OIL PRODUCTION



SOURCE: MONTANA OIL & GAS ANNUAL REVIEW

The Northern Montana region is a state designation and is shown on Map 1.

TABLE 2
OIL PRODUCTION AND WELL HISTORY FOR NORTHERN MONTANA

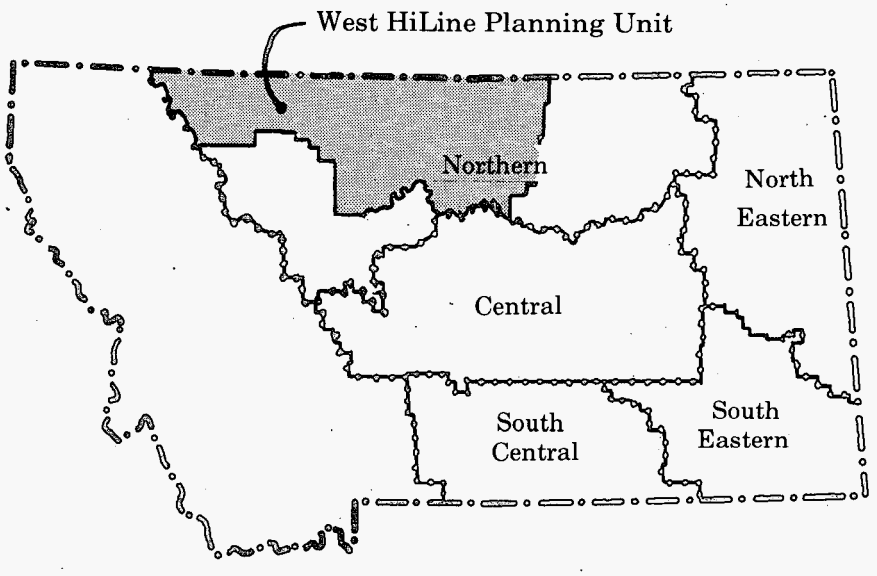
YEAR	PRODUCTION IN BBLS	NUMBER OF PRODUCING WELLS	AVERAGE DAILY PRODUCTION IN BBLS/WELL/DAY
1958	4,348,256	3120	3.8
1959	4,307,739	3067	3.8
1960	4,332,218	2811	4.2
1961	4,211,017	2447	4.7
1962	4,252,304	2615	4.5
1963	4,530,510	2550	4.9
1964	5,705,948	2216	7.4
1965	6,826,261	2649	7.1
1966	7,991,302	2308	9.5
1967	6,758,280	2097	8.8
1968	6,883,493	1898	9.9
1969	7,557,966	1827	11.3
1970	7,680,831	1806	11.6
1971	7,292,476	1768	11.3
1972	6,646,908	1856	9.8
1973	5,948,826	1708	9.5
1974	5,464,319	1802	8.3
1975	4,551,324	2067	6.0
1976	4,200,539	1978	5.8
1977	4,060,957	1999	5.6
1978	3,671,322	2052	4.9
1979	3,536,296	2089	4.6

TABLE 2 (CONT)
OIL PRODUCTION AND WELL HISTORY FOR NORTHERN MONTANA

YEAR	PRODUCTION IN BBLS	NUMBER OF PRODUCING WELLS	AVERAGE DAILY PRODUCTION IN BBLS/WELL/DAY
1980	3,516,807	2,212	4.3
1981	3,605,207	2,280	4.3
1982	3,680,043	2,455	4.1
1983	3,682,130	2,693	3.7
1984	3,708,185	2,610	3.9
1985	3,419,300	2,803	3.3
1986	3,220,769	3,017	2.9
TOTAL	145,591,533	N/A	N/A
Average	5,020,398	2,303	6.3

Source: Montana Oil and Gas Annual Reviews, 1958-1986

Map 1. Montana Producing Regions



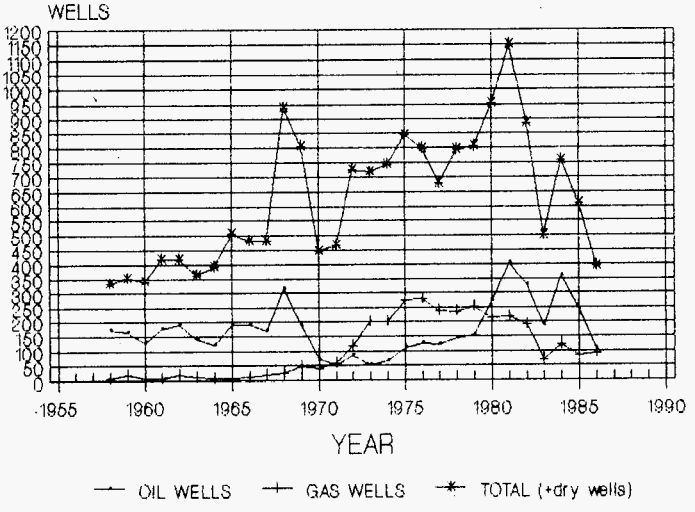
The Tiger Ridge field, and its related surrounding fields, is currently the largest gas producing region in the planning area. The Tiger Ridge field covers nearly 53,000 acres and has produced more than 75,000,000,000 cubic feet of natural gas since discovery in 1966.

Because of low gas prices (about $.10 per 1000 cubic feet in 1966) most early exploration was for oil and many wells capable of producing gas were considered to be of little or no value. However, wells drilled near existing pipelines and markets were produced. In the early 1970s the demand for natural gas increased as did its price and the level of exploration and development.

Figure 2 shows the increased number of gas wells drilled in the early 70s as the price started to increase. In the early 80s the gas market became soft because of the number of gas wells completed. This resulted in less drilling for gas. The gas "glut" is still with us at present however, the wells drilled in the early 70s will start to decline in production and drilling should pick up again in the future.

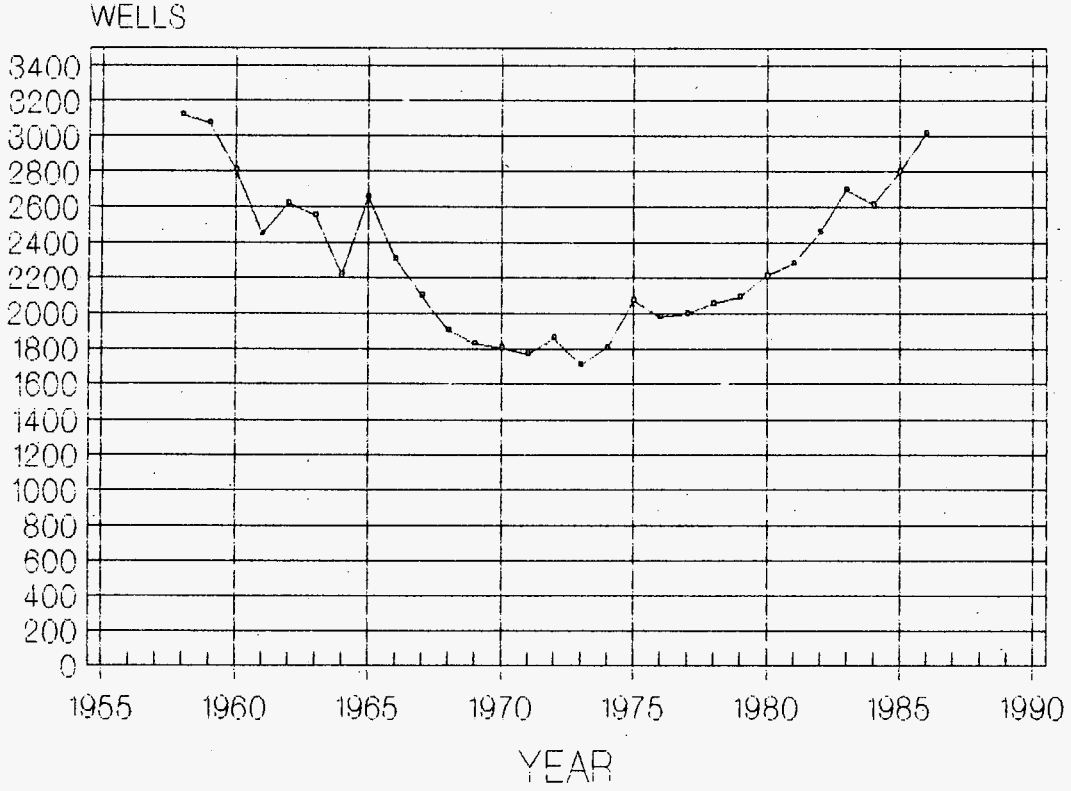
Figure 3 shows the number of producing wells (oil and gas) in the Northern Region. The early 70s were influenced by both the oil embargo and subsequent shortage and the better market for gas. The total number of producing wells has increased in a steady manner since the early 70s because of these factors. If the oil prices stay low and the gas market stays soft we may expect the number of producing wells to stay at this level or possibly decline. There may be a one for one replacement of producing wells, one well gets abandoned and another gets completed.

FIGURE 2: STATE OF MONTANA WELLS
COMPLETED OIL VS COMPLETED GAS VS TOTAL*



* TOTAL WELLS INCLUDES DRY HOLES
SOURCE: MONTANA OIL & GAS ANNUAL REVIEWS

FIGURE 3: NORTHERN MONTANA PRODUCING WELLS



SOURCE: MONTANA OIL & GAS ANNUAL REVIEWS

Table 3 and Figure 4 show the total number of wells drilled in the HiLine counties, versus the federal wells drilled in those same counties. Figure 5 through 10 show a county by county breakdown of this information. The federal drilling reflects the trend of the total. Unless there is a major shift in state or federal taxation or regulation, BLM would expect to see the number of federal wells drilled to follow the trend of total wells. If the drilling goes up the number of federal wells drilled would increase. If drilling declines federal drilling would probably decline.

Each county has federal production and in most of the counties the federal production is a significant portion of the total (see Table 4).

D. Present Activity

Presently about 887,178 barrels of federal oil and 8,912,700,000 cubic feet of federal natural gas are produced each year in the planning area. However, oil production is declining as the reserves in Kevin Sunburst and Cut Bank fields are being depleted.

In 1986, the average oil production in the Northern Montana region was 2.9 barrels per well per day. This low level of production is possible because reservoirs in this region are shallow and production costs are less than those for deeper wells. In addition, most oil is produced by independent operators who have lower overhead and operating costs than a major oil company. Thus, they are able to produce these wells down to a lower production rate and smaller profit margin. However, as production rates continue to decline, more and more of these wells will become uneconomic and will require plugging.

As of January, 1988, there were approximately 995 active, unreclaimed well sites on federal minerals within the planning area. Each of these sites creates an estimated 2 acres of surface disturbance.

E. Reasonably Foreseeable Development Activity

Based on the preceding analysis of past and current oil and gas activities and trends, the following is a description of the reasonably foreseeable oil and gas exploration and development activity anticipated in the West HiLine area over the next 10 to 15 years.

1. Oil Production

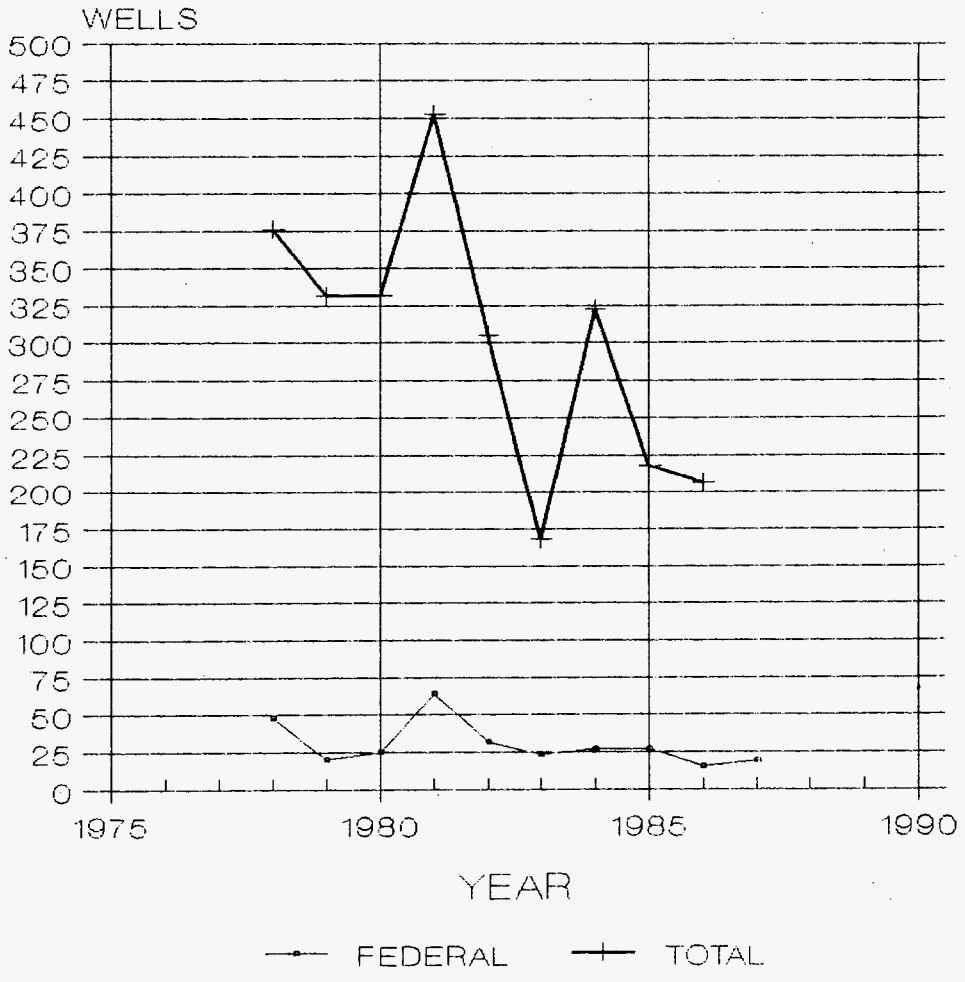
Oil exploration and development wells in the Kevin Sunburst and Cut Bank fields targeted to the present producing formation (Madison Limestone) should continue to decrease. As the average daily production declines to a level where it is no longer possible to produce oil and gas at a profit, the number of well pluggings is expected to increase. In addition to plugging, some

TABLE 3
FEDERAL AND NON-FEDERAL HILINE WELLS DRILLED

Year	Blaine	Choteau	Glacier	Hill	Liberty	Toole	TOTAL
1978							
FEDERAL	41	0	1	1	2	3	48
TOTAL	111	27	29	67	33	109	376
1979							
FEDERAL	12	2	1	0	2	3	20
TOTAL	69	16	26	56	45	120	332
1980							
FEDERAL	14	0	0	0	0	11	25
TOTAL	55	25	50	39	55	108	332
1981							
FEDERAL	20	3	1	1	4	35	64
TOTAL	90	32	48	44	46	193	453
1982							
FEDERAL	8	2	2	5	2	13	32
TOTAL	35	18	36	29	14	173	305
1983							
FEDERAL	5	5	1	1	1	10	23
TOTAL	19	15	29	10	10	85	168
1984							
FEDERAL	8	1	0	0	0	18	27
TOTAL	33	10	40	32	9	199	323
1985							
FEDERAL	10	2	0	0	2	13	27
TOTAL	28	4	37	29	3	117	218
1986							
FEDERAL	10	1	0	0	0	4	15
TOTAL	38	14	35	23	1	96	207.
1987							
FEDERAL	5	0	0	1	1	12	19
TOTAL	*	*	*	*	*	*	*
TOTAL FEDERAL	133	16	6	9	14	122	300
TOTAL	478*	161*	330*	329*	216*	1200*	2714*

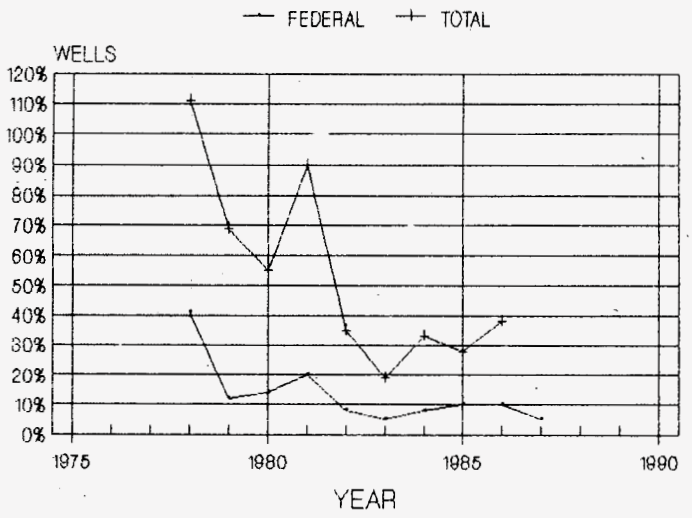
*Non-federal well information for 1987 is not available at this time.
**Data does not include Indian wells
Source: BLM, 1988
Montana Oil and Gas Annual Reviews, 1978-1986.

FIGURE 4: HILINE WELLS



SOURCE: MONTANA OIL & GAS ANNUAL REVIEWS

FIGURE 5: BLAINE COUNTY WELLS
FEDERAL VS TOTAL 1978-1987



SOURCES:MONTANA OIL & GAS ANNUAL REVIEWS
BLM,1988

FIGURE 6: CHOUTEAU COUNTY WELLS
FEDERAL VS TOTAL 1978-1987

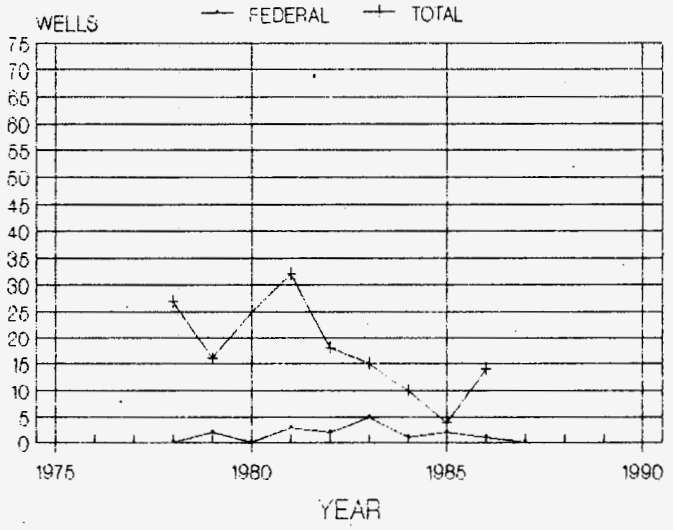


FIGURE 7: GLACIER COUNTY WELLS
FEDERAL VS TOTAL 1978-1987

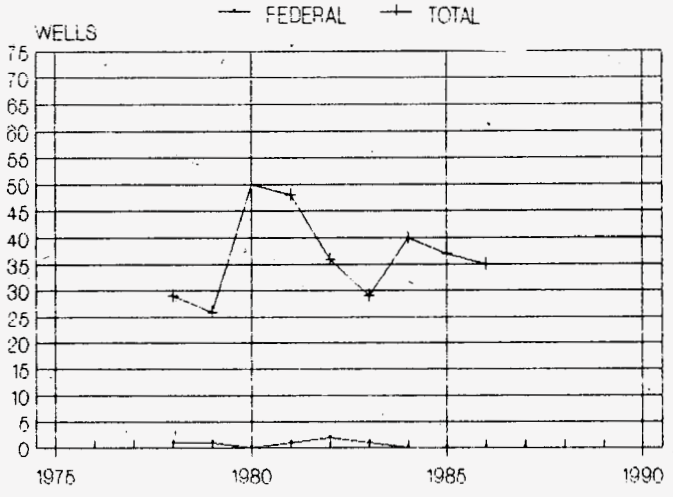
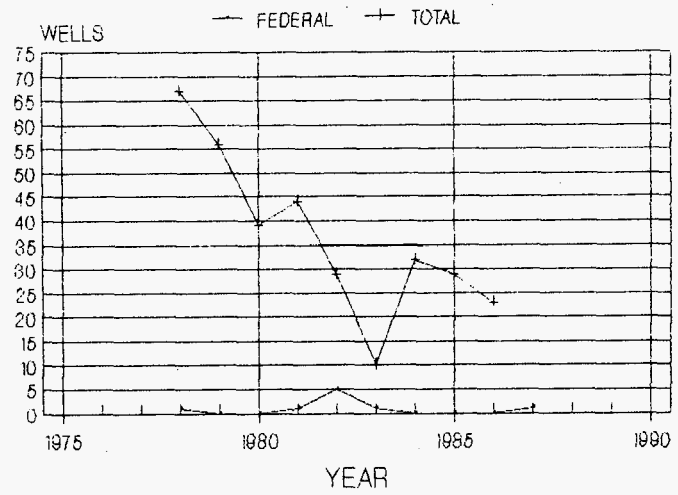


FIGURE 8: HILL COUNTY WELLS
FEDERAL VS TOTAL 1978-1987



SOURCES:MONTANA OIL & GAS ANNUAL REVIEWS
BLM, 1988.

FIGURE 9: LIBERTY COUNTY WELLS
FEDERAL VS TOTAL 1978-1987

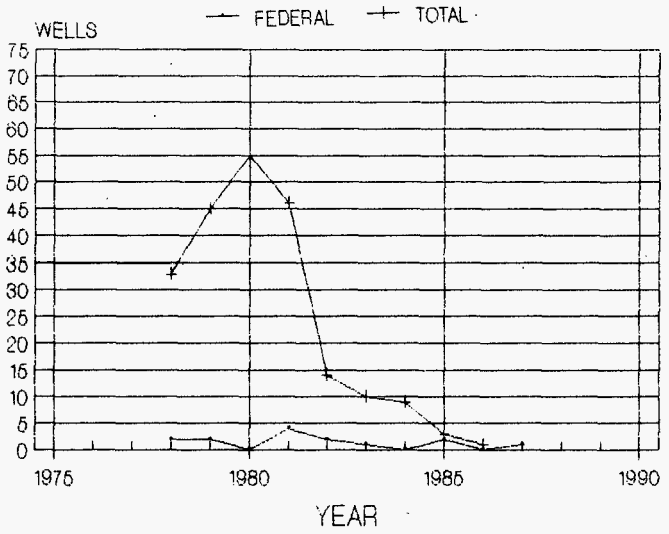
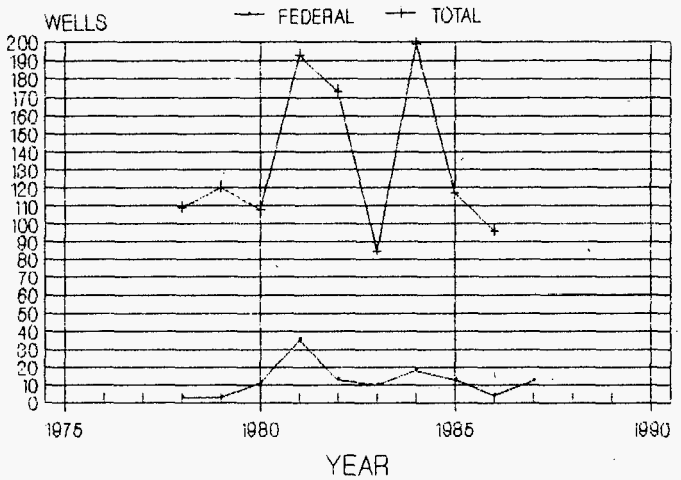


FIGURE 10: TOOLE COUNTY WELLS
FEDERAL VS TOTAL 1978-1987



SOURCES:MONTANA OIL & GAS ANNUAL REVIEWS
BLM, 1988

TABLE 4

Production by County and Federal Percentage for the HiLine Region 1984

	OIL PRODUCTION			GAS PRODUCTION		
County	Total Oil Production (in BBL)	Oil Produced From Federal Leases (in BBL)	% Fed	Total Gas Production (in MCF)	Gas Produced From Federal Leases (in MCF)	% Fed
Glacier	1,359,188	234,259	17.2	3,062,034	256,428	8.4
Liberty	381,247	277,004	72.7	2,252,765	432,924	19.2
Toole	1,750,933	329,808	18.8	5,884,349	984,420	16.7
Blaine	190,774	46,116	24.2	11,074,172	4,937,400	44.6
Chouteau	0	0	0.0	1,126,370	835,416	74.2
Hill	2,175	0	0.0	6,749,471	1,466,112	21.7
TOTAL	3,684,317	887,187	24.1	30,149,161	8,912,700	29.6

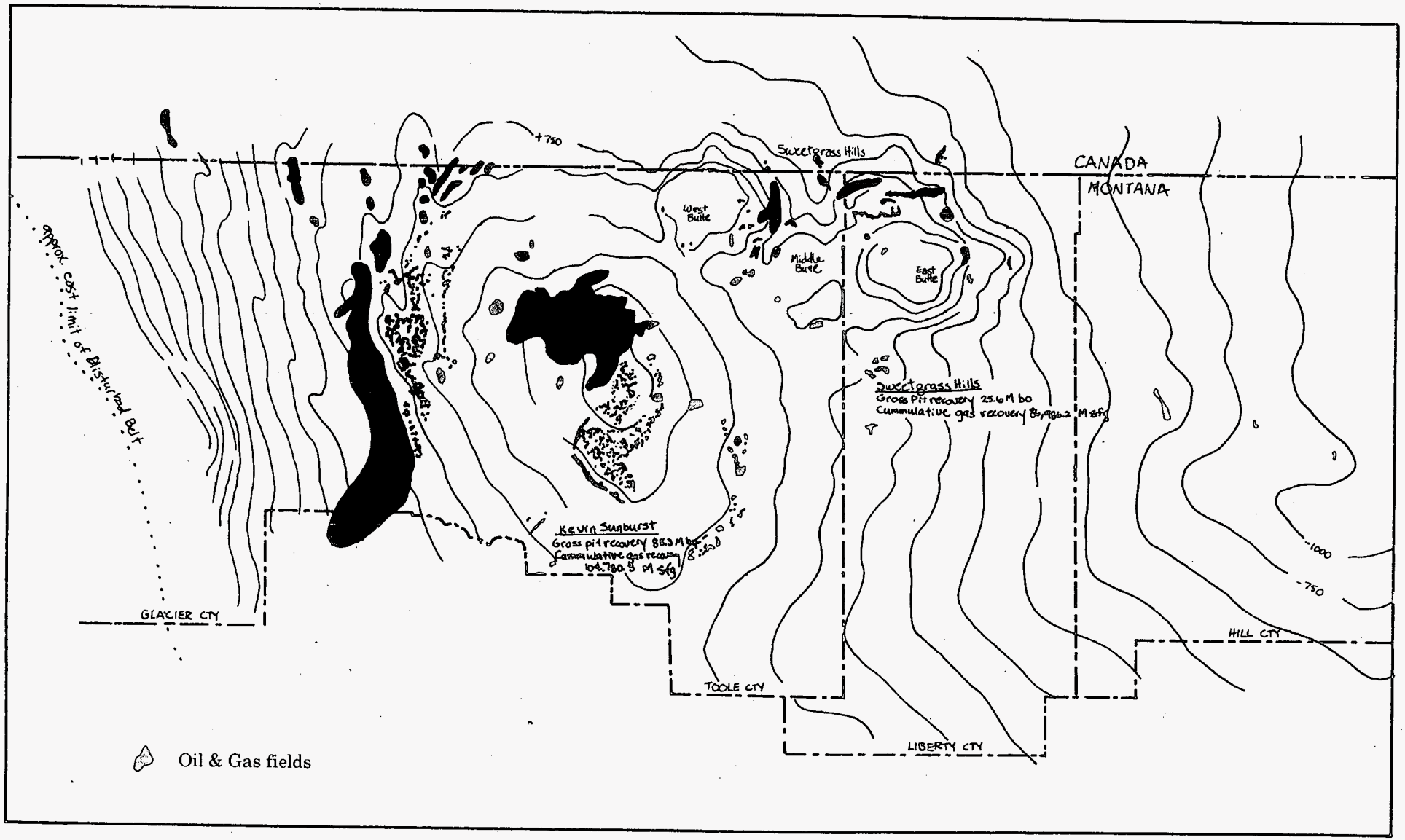
Source: BLM, 1988
Montana, Oil and Gas Annual Reviews

of these existing wells are likely to be re-entered and deepened with expectations of encountering hydrocarbons in deeper sedimentary horizons. Little exploration of these older horizons has occurred to date, but hydrocarbons in the older, deeper, Devonian age, Nisku formation have been discovered and produced. The extent to which the deeper zones will add to new production in this area is unknown.

As previously described, the State of Montana has established an oil field spacing pattern of one well per 40 acres for wells 0 to 6000 feet in depth. However, in some fields such as the Kevin Sunburst field (spaced at one well per 4.4 acres) the spacing pattern may vary. Because new oil production anticipated to be discovered in the planning area is expected to be from deeper horizons within existing fields, the well spacing should be a maximum of one well per 40 acres. Therefore, a field of 640 acres would require 16 wells to be fully developed. These wells would be drilled over a 2 to 8 year period if the field were diligently developed and would produce for approximately 20 years. If secondary recovery techniques were employed, additional wells might be drilled for water injection purposes and the life of the existing oil wells would be extended for approximately 5 to 20 years.

It is anticipated that most of the deeper exploration would occur in the Kevin Sunburst Dome region and at the periphery of other domal structures along the Sweet Grass Arch. The Sweet Grass Arch is a broad regional fold extending through Paleozoic and Mesozoic sediments and running northward from Great Falls into Canada. Present configuration of the arch is the result of Tertiary Laramide uplift. The Kevin-Sunburst Dome is "Imposed" on the west flank and on the crest of the arch. Other minor domes created as a result of sediments being uplifted by igneous (laccolithic) intrusions (Sweet Grass Hills) are scattered along the north central section of the arch, (see Map 2).

Because crystalline basement rock (non-sedimentary rock very unlikely to contain hydrocarbons) is at a relatively shallow depth (5000 - 6000 feet) except in the extreme western portion of the planning area, future, deeper wells should result in only minor changes in how wells are drilled, the equipment necessary for drilling and completion, and the time necessary for drilling. The physical drilling of a deeper well would require larger equipment and slight modifications to the methods employed. Slightly larger reserve pits and drill pads would be needed and depending upon the production quantities, additional facilities may be required at the surface. With the exception of gathering and transport pipelines, it is not anticipated that additional surface disturbance above that necessary for drilling would be required for production facilities.



Map 2. Oil and Gas fields in the portion of the Sweet Grass Arch found in the West HiLine Planning Area

With very little data on deep wells in the planning area, it is difficult to predict an average time required to drill to an older productive horizon, but it is estimated at 3 to 5 weeks for an exploratory hole and 10 to 20 days for a development well. Testing, logging and completion are estimated at 3 to 5 days.

Although no large oil field discoveries are expected within the planning area, continued exploration is anticipated. The rate of exploration should be in direct response to the price of oil. With domestic consumption rising and the increasing dependency on foreign oil, we can expect oil prices and domestic exploratory activity to increase over the next decade.

2. Gas Production

The State of Montana sets spacing unit sizes for the production of gas. Although the federal government is not bound by these spacing unit sizes, they are generally recognized. Until recently, most gas fields in the planning region were spaced to allow one well per 640 acres. Within the past several years many operators have requested a decrease in the size of the spacing unit, or for permission to drill an additional well per spacing unit. These requests resulted from data indicating that one well per 640 acres is not effectively draining the gas reservoirs in certain fields. As additional data is obtained, it is probable that more and more fields will be delineated for the production of gas based on one well per 320 acres.

As a result of these spacing changes, a typical, future, HiLine gas field with a surface area of 3200 acres could be expected to require 10 wells to be fully developed. Assuming diligent development, these wells would be drilled over a 5 to 10 year period and the field should produce for 20 to 25 years. Larger fields will of course require a longer time to develop, thus extending the life of the field. The converse is true for smaller fields. Because 80% to 95% of the original gas in place can be recovered from a typical gas reservoir, no secondary recovery techniques are used.

Further development will continue in the existing gas fields to satisfy contract quotas, as existing individual well production declines due to depletion, and as a result of spacing changes.

Future exploration will most probably occur, as in the past, along the margins of existing fields as stepout wells. These exploratory wells will better delineate the boundaries of existing fields and will probably result in the discovery of several new fields over the next decade. These new discoveries should be comparable in depth, size, reserves and areal extent as existing fields in the area. No new large field, e.g. Tiger Ridge, discoveries would be anticipated within the next 10 to 15 years.

Given a sudden increase in the demand for natural gas or a sharp increase in price, a large exploration or development program throughout the planning area could develop very rapidly. This is primarily due to the relatively shallow existing reservoirs and the accessibility of land in the area. However, one of the major problems with developing and exploring for natural gas in Montana is the inability to transport produced gas to eastern and western markets. The Northern Natural Gas Company and Montana Power Company are continuously expanding their pipeline systems. Because most companies generally will not intensively or

diligently drill an area when there is little or no market for the gas, future expansion of this pipeline network should promote exploration and development of new and existing fields, and, whenever necessary, allow for rapid exploration and development of oil and gas resources in the planning area.

3. General Oil and Gas Drilling Activity

Based on past activity and professional judgement it is reasonable to expect at least one cycle of increased drilling activity over the next decade, and for approximately 30 to 35 non-Indian, federal wells to be drilled each year over the next 10 to 15 years. This means approximately 300 to 525 wells could be drilled on public minerals throughout the life of this plan mostly within or around current existing fields. Each of these sites would create an estimated 2 acres of surface disturbance.

Several (2-3) new gas fields approximately 3,200 acres in size and composed of 10 wells each may be developed. No new oil fields are expected but expansion and further development of existing fields is anticipated.

It must be pointed out that future exploration does not necessarily mean an increase in the number of producing wells. Table 5 summarizes the wells drilled throughout Montana (except for Indian wells) between 1958 and 1986 and clearly illustrates that only a small percentage of exploratory wells are completed as producers. In addition BLM can expect an unknown number of wells to be plugged and abandoned in this time period.

Recent economic conditions within the oil industry resulted in a sharp decline in the number of active exploratory wells and the number of developmental wells. A turn around in the oil industry or an increase in the price of oil purchased from abroad, would spur an increase in oil and gas activity in the planning area. Continued low oil prices and depressed economic conditions would result in an increase in the number of abandonments and a decrease in domestic exploration and development.

TABLE 5
MONTANA WELL SUMMARY FOR 1958 - 1986

	DEVELOPMENT WELLS DRILLED			EXPLORATORY WELLS DRILLED			TOTAL WELLS DRILLED		
YEAR	OIL	GAS	DRY	OIL	GAS	DRY	OIL	GAS	DRY
1958	159	7	46	12	2	109	171	9	155
1959	156	12	71	7	6	101	163	18	172
1960	114	4	58	14	3	150	128	7	208
1961	169	6	60	7	2	173	176	8	233
1962	182	16	57	8	2	154	190	18	211
1963	131	6	60	8	5	152	139	11	212
1964	100	7	109	22	3	150	122	10	259
1965	177	9	107	14	1	199	191	10	306
1966	179	9	96	10	3	185	189	12	281
1967	162	14	104	7	5	191	169	19	295
1968	300	14	89	15	13	509	315	27	598
1969	171	44	105	15	5	466	186	49	571
1970	60	30	63	12	11	272	72	41	335
1971	49	36	34	3	22	323	52	58	357
1972	79	97	87	7	19	435	86	116	522
1973	46	165	100	6	36	366	52	201	466
1974	58	179	212	7	21	265	65	200	477
1975	105	261	222	6	15	236	111	276	458
1976	106	264	169	17	8	223	123	281	392
1977	98	220	188	24	19	129	122	239	317
1978	123	223	232	21	15	179	144	238	411
1979	120	235	182	35	20	211	155	255	393

TABLE 5 (CONT)
MONTANA WELL SUMMARY FOR 1958 - 1986

	DEVELOPMENT WELLS DRILLED			EXPLORATORY WELLS DRILLED			TOTAL WELLS DRILLED		
YEAR	OIL	GAS	DRY	OIL	GAS	DRY	OIL	GAS	DRY
1980	241	203	206	30	12	260	271	215	466
1981	276	133	188	126	85	341	402	218	529
1982	263	145	120	64	46	248	327	191	368
1983	160	55	88	25	16	156	185	71	244
1984	327	99	87	33	21	189	360	120	276
1985	227	84	90	16	2	192	243	86	282
1986	90	81	69	11	10	130	101	91	199
TOTAL	4428	2658	3299	582	428	6694	5010	3095	9993

F. CUMULATIVE IMPACTS OF THIS SCENARIO

This section describes the cumulative impacts, by resource component, of the preceding oil and gas development scenario on public minerals during the life of this RMP.

1. Air Quality

Air quality would be slightly affected locally by all stages of oil and gas development, including exploration, development, production and abandonment. Dust created during road and drilling pad construction increases particulate concentrations in the air. This problem would be worst during dry and windy weather, aggravated by the semi-arid climate and high winds that occur through most of the planning area. These impacts are localized and of short term duration. These concentrations would be relatively minor when compared to the increases from the continued use of roads by oil and gas maintenance personnel, landowners and lessees, and the general public for recreation purposes. Emissions from internal combustion engines would also contribute to particulate loading.

Dust from traffic and smoke and other emissions from vehicles and stationary engines used in the drilling operations would be the primary air pollutants during development of oil and gas wells. During the production stage, potential pollutants such as carbon monoxide, hydrocarbons, nitrogen oxides, sulphur oxides and hydrogen sulfide could occur in separation facilities, during disposal of liquid water and unwanted gas, by the burning of waste petroleum products, by the emission of objectionable odors and by the venting of noxious vapors from storage tanks. Locally significant air pollution could occur during production if a system failure resulted in accidental explosions, blowouts, oil spills or leaks.

Direct air contamination from oil and gas operations would cease on abandonment, but the continued use of roads and trails by the public could produce some dust in the immediate area for years to come.

The future effects of 300-525 new wells on federal lands in the planning area would be primarily from wind generated dust during construction operations and are considered short-term, local impacts.

Cumulatively, impacts to air quality from oil and gas operation in the planning area, have been and will continue to be insignificant.

2. Soils

Soils are usually affected by oil and gas operations in two ways - surface disturbances and soil compaction. A third kind of impact, the spilling of fluids on the soil, can also occur.

Soils disturbed by building drill pads, access roads and pipelines would be prone to accelerated erosion because of the removal of protective vegetation and litter cover. Protective cover binds the soil, provides desirable surface texture for infiltration of water and air and protects the surface from compaction by raindrops. Wind and water erosion on bare soil surfaces would cause more sediment offsite, creating additional soil cover damage and further increasing erosion. The total effect on erosion would be moderate overall, but significant where surface disturbances occurred on slopes greater than 30%, in areas of fragile or unproductive soils (such as those in river breaks).

Soil losses would be more severe if the topsoil were not stockpiled during construction for later use. Impacts would be greatest on shallow, soils of low productivity and on the deep, fertile, highly productive soils on moderately sloping to steep landscapes.

The weight of trucks or other heavy equipment on the ground surface compacts the soil, causing spaces within the soil profile to collapse. The soil is rendered more dense, less porous and less permeable. Compaction often severely reduces the infiltration capacity of the soil, leading to increased surface runoff and the possibility of accelerated gully and channel erosion. Compaction will also limit vegetation production.

The effects of compaction would vary with soil type, climate and the degree of the compacting potential. Effects would be most severe when soils are wet. This occurs frequently during the spring and early summer months and occasionally during the fall.

Compaction would also be affected by how often trucks or other heavy equipment passed over the surface. Impacts would be significant where access trails were used continuously, particularly during wet periods. Seismic surveys would cause significant impacts when their heavy vehicles passed along survey lines during wet periods.

A third kind of impact on soils could be caused by oil spills or the discharge of salt-enriched water from wells and treaters. These fluids might affect the soil severely in a relatively localized area. Toxic and saline concentrations from the fluids would often be capable of sterilizing the soil.

Oil spills have significant short-term impacts on vegetation, but they break down naturally with time and don't result in serious long-term erosion problems. Salt water spills which are sometimes associated with oil production can have more serious long-term impacts.

There would be a possibility of localized, severe erosion due to loss of vegetation by oil or saltwater spills or, improper construction. These oil or salt water spills may flow down slope into drainages.

If the lands associated with oil and gas activity are reclaimed they will reestablish with native vegetation over time. The length of time required for the lands to develop the production capability they had before oil and gas operations where spills occur, is often so great (many decades to centuries), that this is considered a long-term, moderate residual impact.

Depending upon the number of developed wells in a given area, unreclaimed lands could cause a substantial loss in land productivity. Assuming that an average drilling site, including wells, pads, storage tanks, service roads, etc., would disturb an estimated 2 acres of land surface, then, at maximum development, the amount of productive land lost to oil development would likely approximate 32 acres per square mile (5% of 640 acres), or about 6.4 acres per square mile (1% of 640 acres) for lands developed for natural gas production.

Specifically, these impacts will occur within the developed oil and gas field boundaries, where impacts could be locally significant if erosion or spills occur. Overall impacts to the planning areas would be considered slight.

3. Water

Surface Water - Oil and gas activities could impact surface water quality as erosion and sedimentation are accelerated on disturbed areas. Mitigation outlined in current oil and gas regulations and policies will lessen these impacts. The average disturbance per well site is estimated at 2 acres. The 995 existing wells and 525 potential wells would result in a total disturbance to approximately 3,000 acres. The cumulative impacts of any accelerated erosion on these 3,000 acres to water quality will be insignificant when compared to the erosion and sedimentation occurring on the entire 626,098 acres in the planning area.

Produced water in the planning area has a total dissolved solids (TDS) content ranging from 3,000 parts per million (ppm) to 10,000 ppm. Water with a TDS concentration less than 7,000 ppm is suitable for livestock use and has been used for that purpose

in several locations in the planning area. All water produced from oil and gas wells is disposed of in accordance with NTL-2B regulations.

Produced water not used for livestock is evaporated from pits. Pits may be lined if the produced water is higher in TDS concentration than the nearest aquifer. Wells producing greater than five barrels per day on a monthly average are required to inject the produced water back into the formation from which it came. EPA regulates this underground injection control program.

Accidental spills are reclaimed in accordance with existing contingency plans as are any other unforeseen accidents.

Due to existing regulations and contingency plans, cumulative impacts to surface water quality are expected to be insignificant.

Ground Water - As with surface water, existing regulations governing drilling, plugging and abandoning oil and gas wells will lessen impacts to ground water quality.

Produced waters and enhanced recovery waters are injected back into the aquifers from which they came under EPA regulations.

Evaporation ponds cannot store water with TDS concentrations greater than that of the nearest aquifer unless lined. If a leak should develop in a liner, contingency plans exist which require the oil or gas company to reclaim the impacted aquifer.

Cumulative impacts to ground water quality from oil and gas activities are expected to be insignificant.

Seismic Exploration - Regulations governing seismic exploration activities do not exist to the extent they do for other oil and gas activities. Impacts to surface water quality are not expected to be significant. However, impacts to ground water quality and quantity could be locally significant.

Shallow (less than 500' deep) stock and domestic wells have the greatest potential for being impacted by seismic activity. Underground detonations could cause cross contamination of aquifers, reduced water yields, or lowered static water levels.

Cumulative impacts from seismic activity to ground water quantity and quality is not expected to be significant, but localized significant impacts could occur.

4. Cultural Resources

Cultural sites could be affected by the loss of the opportunity

to examine artifacts in their true relationship with one another and the destruction of features, particularly in areas where there is a high concentration of sites. Most of these impacts are created by the surface disturbances associated with oil and gas exploration and development. Generally, the specific locations of oil and gas developments are somewhat flexible, so most impacts to cultural resources can be avoided by relocating the developments. If this is not possible, mitigation would be prescribed for significant sites in accordance with BLM policy and federal regulations.

5. Vegetation

The direct impacts to vegetation from oil and gas operations would come from destruction of the vegetation caused by construction of seismograph trails, drainage crossings, drill pads, roads, pipelines and other facilities.

Site specific impacts to vegetation would vary from moderate to significant depending on the stage of oil and gas development and site location.

Potential offsite impacts to wetland vegetation could occur because of siltation of streams from surface disturbances, increased water temperatures from treater facilities, contamination of water by oil spills and the release of chemicals into surface drainages. These impacts are considered minor because stipulations applied during seismic, exploration and production phases require avoidance of sensitive areas.

Invader species and noxious plants might replace native species on some disturbed sites exposed to a seed source. The spread of invaders to offsite areas would have a negative effect on the composition of vegetation. The vehicles and equipment used during oil and gas exploration and development could spread noxious plant seeds. The rehabilitation of the area and the seeding of native species suitable to the soils and climate would reduce the time required to replace the present plant composition if overrun by invader annuals and perennials. Despite weed control and rehabilitative seeding, noxious plants would crop up in most areas.

The length of time required for restoration of native species would depend upon the composition of the vegetation disturbed. Grassland vegetation types can usually be restored within five growing seasons, so the negative impact would be short-term. Sagebrush and other woody vegetation communities generally require more time for rehabilitation. Stable predisturbance vegetation communities should be present within 20-30 years.

The length of time needed for rehabilitation, in this case, would be dependent upon the condition of the site. Current disturbance is generally found in grassland communities and the future development of 300-525 wells is expected to occur in similar areas. Thus, vegetation will sustain locally moderate impacts until sites are reclaimed. However, these impacts are considered minor overall.

6. Fire

Historically, fire occurrence in this area has been very low. Through a combination of climatic, topographic and vegetative factors, wildfires aren't a common occurrence.

Prescribed fire, being considered for this area, would not create any unreasonable problems for planned burning. Additional access into previously unaccessible areas would help by providing access for suppression. This mineral development scenario over the next 10-15 years would have minor, if any, impact on the fire presuppression and suppression program.

7. Grazing Management

Potential off site impacts could occur from increased erosion, resulting in increased siltation. These impacts are minor and are reduced when proper rehabilitation is accomplished.

Impacts to livestock grazing would also include a loss of forage as a result of the trampling effect of seismograph crews, surface disturbance from blading access for crews, the construction of drilling pads, and the surface disturbance resulting from construction of permanent access to developed sites. Locally moderate negative impacts would occur from surface disturbing operations until reclamation has been accomplished.

A short-term loss of 286 AUMs would occur from an anticipated average of 1,000 active unreclaimed wells throughout the life of the plan. If the current 1,000 wells and the additional 300-525 well sites all remain active and unreclaimed, this would represent a temporary loss of 429 AUMs. Some of these AUMs would be lost permanently due to the construction of permanent roads. This is considered a minor impact to grazing management.

8. Wildlife and Fisheries

All stages of oil and gas operations directly affect wildlife. Habitat destruction by the construction of drilling pads and access roads is approximately 1,990 acres (995 wells with 2 acres of disturbance each) and could increase by an additional 600 to 1,050 acres (300-525 wells) during the life of the plan. This

impact is minor considering the area contains 591,000 acres of crucial and high value habitat for numerous species. Not all drilling is expected to occur within the crucial and high value habitat.

The major impact of past and present development has been the disturbance of wildlife populations by oil and gas drilling crews and the opening of new, previously undisturbed areas to the public by the creation of access roads. This impact is expected to continue. However, the BLM would have the option of closing new access roads that occur in crucial and high value habitat.

a. Big Game

Habitat loss by the construction of drilling pads and access roads would be minor. However, building roads and facilities into crucial big game habitat could increase human disturbances during crucial periods in the life cycle of the species involved (mule deer, antelope, white-tailed deer, and bighorn sheep). Crucial fawning areas and winter ranges might be avoided by game if these disturbances became intolerable. These impacts could be offset by seasonal restrictions as stated in the RMP. In addition roads into important habitat could be closed following drilling activities. The cumulative impacts from this disturbance would be minor.

b. Upland Game Birds

The breeding and nesting activities of sage grouse and sharp-tailed grouse could be disturbed during the exploration stage. Seismic activities and well drilling could disturb mating activities occurring on leks and could also disturb nesting activities causing abandonment. Nests could also be directly destroyed by exploration rigs and construction equipment. These disturbance factors are minimized by continuing the implementation of the RMP stipulations which restrict drilling within 500 feet of known leks and provide for special care in avoiding nesting areas between March 1 and June 30. Habitat losses based on past disturbances would be minor.

Increased access into previously undisturbed areas would increase harassment and mortality of these species. This, however, would only be during the average 3-5 day drilling period and roads could subsequently be closed for dry holes in important habitat. Overall cumulative impacts would be minor.

c. Waterfowl

Exploration and seismic activities would cause little direct mortality to waterfowl. However, these activities could disturb nesting activities, potentially causing abandonment. Accidental oil spills into aquatic habitats would trap or poison birds landing on the impacted bodies of water. These substances would also destroy food and cover used by waterfowl species. During development, nesting cover near aquatic habitats would be destroyed, causing a slight reduction in waterfowl populations. Reservoirs, seeps and other water sources serving as waterfowl habitat could be altered by construction. However, these impacts would be offset by the stipulations in the RMP which restrict drilling activities within 500 feet of reservoirs, lakes and ponds. Additional production would be lost if human activities discouraged nesting, which could happen during any stage of oil and gas operations. Overall, cumulative impacts would be minor.

d. Nongame

Small mammals would be killed by excavations, especially during drilling and development. Road construction and more vehicle travel through an area would result in more vehicle-small mammal collisions. Indirect mortality from habitat loss would be severe on particular sites, if the entire home ranges of small mammals were destroyed. Based on the small amount of acreage involved, impacts would be minor.

Bird nests and young birds would be destroyed during exploration, drilling and field development. Road kills of small birds and raptors would increase by the construction of new roads and increased vehicle traffic. Indirect mortality of nongame birds from habitat loss due to construction would occur, this loss would be in proportion to the importance and type of habitat destroyed. Persistent human activities near raptor nests could force these birds to abandon their nests and possibly their offspring. These impacts however, would be offset by the application of buffer zones as described in the "Rocky Mountain Front Raptor Guidelines" (see Appendix 2.2).

Although little is known about the herpetofauna and invertebrates present in the RMP area, human disturbance and habitat loss could be expected. Based on past oil and gas activities in the area, cumulative impacts to nongame species would be minor.

e. Threatened and Endangered Wildlife Species

Oil and gas operations could affect threatened and endangered species slightly. Although, there is no known ferret population in the RMP area, human disturbance from oil and gas activities could disturb potential habitat during the 3-5 day drilling period. Following that time, disturbance would be minor. The RMP stipulates no drilling could occur within 100 feet of black-tailed prairie dog towns, thereby minimizing loss of potential ferret habitat. The impacts to black-footed ferrets would be minor.

Impacts to the bald eagle and peregrine falcon would be minimal since these species' critical habitat is protected by the stipulations in the RMP. Disturbance from drilling and exploration to piping plovers could occur during the nesting period causing abandonment. The likelihood of drilling occurring in critical piping plover habitat, namely alkali wetlands and gravel shorelines of lakes and rivers, is slight. The buffer zone of 500 feet around reservoirs, lakes and ponds would also protect nesting habitat. Based on past drilling activities, impacts to T&E species would be minor.

f. Fisheries

Impacts to fisheries within the RMP area include accidental release of toxic substances into the water, accelerated erosion into fisheries habitat from construction of drilling sites and access roads, and the release of water from wells into fisheries habitat resulting in a change of water temperature to intolerable levels for some species of fish. All these could directly influence fish populations and the aquatic organisms they eat.

To date no significant negative impacts have occurred on any fishery within the RMP area from oil and gas activities. This is primarily due to the fact that no activity is allowed within 500 feet of a known fishery, as stated in the RMP. Therefore, future impacts to fisheries by oil activities would be minor.

9. Recreation

The main recreational opportunities on public lands in the RMP area are hunting, fishing, sightseeing, dispersed off-road vehicle (ORV) use, hiking, camping and boating along the Upper Missouri National Wild and Scenic River. Current recreational opportunities range from those associated with undeveloped primitive settings in extensive recreation management areas to those found in highly roaded and developed settings in special

recreation management areas. Recreational use is expected to increase in the planning area over the next 20 years as an increasingly urbanized population seeks wildland recreation, new types of recreational equipment, more leisure time, and the number of retired people increases.

The seismic exploration stage often results in cross country travel and high blading of seismograph roads. This might lead to more ORV use by hunters and other recreationists in designated open ORV areas, a beneficial impact to ORV enthusiasts, but a negative impact to those desiring pristine, undisturbed areas. These negative impacts could be minor in the Kevin-Sunburst and Cut Bank fields, moderate in the Sweet Grass Hills field and have the potential to be significant in the Leroy field and along the Upper Missouri National Wild and Scenic River.

The short-term impacts of dust from more traffic and noise from exploratory drilling would cause relatively minor disturbances. New roads would allow increased access by hunters and campers to previously remote areas. More use would cause indirect impacts, i.e. increased erosion, the greater possibility of destruction to cultural resources and increased hunting pressure. It should be noted that the effects could be of long duration.

Impacts on recreation from oil and gas activities, particularly in field development, revolve around the change in recreational opportunities from those found in a natural setting to those in a roaded industrialized setting such as may be found in oil fields with closely spaced wells, structures, access roads, pipelines, etc. These tend to be long-term impacts. The gas fields with shallower drilling depths and wider spacings would have much less impact. The impact on recreational quality would depend upon the capacity of these special recreation management areas to support the additional demand with the majority of the impacts being minor.

The major site specific impacts from oil and gas development and production would be increased recreational access, disturbance of primitive values and the possible increase in ORV use. Access roads provide corridors of use and sometimes improve hunting harvest. As can be imagined, roadless areas (whether designated wilderness study areas or not) would be affected by development. Although there are safety hazards in oil fields (noxious fumes, heavy equipment and potentially explosive chemicals), the impact would be insignificant. Intensively used areas also affect recreational uses like hunting, hiking, camping and sightseeing, which depend in some degree on solitude. These negative impacts would be most severe in special recreation management areas. Oil fields would cause more severe impacts than natural gas fields because of the need of the former for water pits, horsehead pumps, tank facilities and the closer spacing requirements.

Based on the location of existing fields in relation to areas of high recreational opportunities, the cumulative impacts of past, present and future oil and gas activity on recreation would be regarded as a minor, though long-term impact.

10. Visual/Aesthetics

The possibility of either beneficial or adverse visual impacts would depend entirely on the location of the 300-525 new wells and the 2-3 new gas fields that might be developed.

If there is a decision to lease portions of the UMNWSR during the life of this RMP, any exploration or field development activity within or visible from the river corridor would have a significant short or long-term negative impact, on river visitor expectations and on the natural integrity of the landscape.

The visual impacts from exploratory drilling would include the construction of roads and pads. As long as steep cuts are unnecessary, exploratory drilling would have moderate or minor impacts on the form and line of the landscape and vegetation. Steep cuts are difficult to reclaim and leave visible scars which could be a significant negative impact.

The most significant visual impacts from oil and gas operations would be from the development and production stages. The visual effects of development drilling would be significant immediately around the well. Within a known geologic structure where there is a lot of drilling, the landscape may become industrial in character, at least in the foreground. The use of visual resource management guidelines and landscape design can mitigate many of the adverse impacts. Although the field development stage would still be noticeable, it could be designed to be as unobtrusive as possible.

During the abandonment stage the landscape should be restored, the vegetation reseeded, roads may be put to bed and some production facilities removed.

Generally, the visual resources of the area would be improved after abandonment. In areas like the Missouri Breaks, however, reclamation might be a slow process. Many of the fields might not be abandoned for at least 20 years. There are currently 995 unreclaimed wells with an average disturbed area of 2 acres. The cumulative visual impact would be minor although it could be locally significant in the river corridor and the three WSAs.

11. Wilderness

There are three Wilderness Study Areas (WSAs) within the RMP area that are managed under BLMs Interim Management Policy (IMP): the Stafford WSA (4,800 acres), the Ervin Ridge WSA (10,200 acres) and the western portion of Cow Creek WSA (17,000 acres).

Wilderness values would be affected by oil and gas exploratory drilling and development on pre-FLPMA leases. Drilling rigs might cause significant negative impacts to the audible and visual values for the duration of the operations. Surface disturbances, an average of 2 acres per well, would also cause visual impacts, depending on the depth of the well and the topography of the area. These negative impacts could be mitigated by rehabilitation. The post-FLPMA leases have stipulations and mitigative requirements which would restrict or prohibit impacts which could adversely affect the wilderness values.

The Stafford WSA doesn't have any pre-FLPMA leases and only 260 acres in the post-FLPMA category. The Ervin Ridge WSA has 1,740 acres under pre-FLPMA leases (17%) and 3,738 acres (37%) under post-FLPMA. The Cow Creek WSA has no pre-FLPMA leases but does have 7,230 acres under post-FLPMA category.

Seismic exploration (the presence of aircraft, vehicle tracks, shot hole cuttings, explosions, and other sounds, dust plumes from explosives, litter) would create minor impacts. These operations, resulting in an apparent loss of the natural integrity of the area and a noticeable loss of solitude, would impact wilderness values negatively for anywhere from a few seconds (in the case of noise) to several years (in the case of trash and surface disturbances).

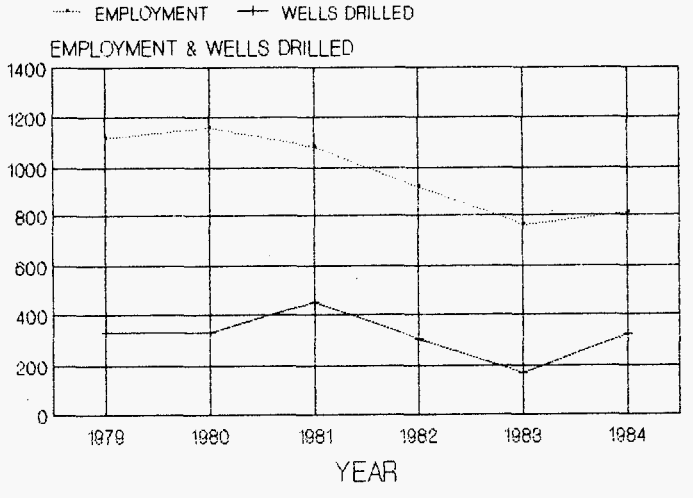
All motorized vehicles in the WSAs are restricted to designated roads, trails, and ways. No cross-country travel is permitted except for administrative use on a case by case basis. Heavy secondary use and maintenance operations along these existing routes would create a minor negative impact.

12. Economic and Social

Currently there is an established oil and gas industry in the planning area with producing oil and gas fields, support services, and one refinery in Cut Bank. All phases of oil and gas activities have occurred in the planning area (i.e., seismic exploration, exploratory drilling, field development and production, and oil refining).

In 1984, this industry provided 800 jobs in the oil and gas sector and an estimated 2,400 jobs in other sectors of the economy. Oil and gas production from federal leases in 1984 accounted for an estimated $72.3 million in business activity, $14.4 million in earnings and 770 jobs in the economy. Since oil and gas activity on federal mineral estate is expected to remain relatively constant, with one cycle of increased drilling activity, the economic importance of this industry should not change significantly during the next 10 to 15 years due to foreseeable development of federal minerals. Figure 11 shows the mining employment and oil/gas wells drilled in the Northern Montana Region from 1979 to 1984. Mining employment in this region is primarily in the oil and gas sector. Any increase in earnings and employment, due to oil and gas activities, would improve economic prospects. Most people and community leaders are currently trying to attract new basic industries into the area.

FIGURE 11: MINING EMPLOYMENT IN RELATION TO WELLS DRILLED IN THE NORTHERN REGION



SOURCE: REGIONAL ECONOMIC INFORMATION SYSTEM, BUREAU OF ECONOMIC ANALYSIS APRIL, 1986.

The economic impacts of future oil and gas activities on the local economy are difficult to assess because of the uncertainty of the extent or spatial distribution of potential oil and gas activities. Generally, the regional economic impacts are greater than the local impacts, due to the capital intensive nature of oil and gas activities (although other social effects are more noticeable locally). Expenditures for oil and gas equipment, supplies, and management skills are often made outside of the

local economy. In the case of seismic exploration and exploratory drilling, expensive equipment, managerial skills, and quite often the labor are brought in from outside the local area. When an exploratory well costing $10 million is drilled, this does not mean all of the $10 million is circulated through the local economy. Similarly if production occurs and the oil and gas is shipped to a destination outside the local area for refining, the sales from the products are not circulated through the local economy. Only when extensive drilling occurs, or a refinery or gas plant is built locally, will the local area experience significant economic gains.

The economic and social effects of oil and gas activities might include the displacement or diversification of other economic activities. For example earth-moving contractors may modify their operations to meet the growing demand for drill pad construction. This normally results in increased job opportunities, higher average incomes, and local population growth. Often, the social, emotional, or economic well-being of some people is enhanced while other persons are adversely affected.

Many communities will experience exploration, but relatively few will have development and production in their immediate vicinity. The range and intensity of possible effects from exploration usually occur in the vicinity of field operations. Local residents see or hear trucks, drill rigs, and construction activity. Exploration involves relatively few personnel who spend several weeks or months in any specific place. About 15 to 30 full-time workers would be associated directly with drilling operations for a single well, depending on depth and location. These workers include the drill rig crew, mud loggers, and tool pushers. Local expenditures depend upon the availability of oil and gas services and support additional jobs in construction, transportation, oil/gas services, and retail trade.

Many communities in the planning area have experienced this activity in the past. This exploration phase, if moderate in scale and properly conducted, will normally produce minor economic and social impacts.

Exceptions to the usually low-key pattern of exploration often occur during short-term increases in drilling activity or following the discovery of a new gas field. Exploration activity will intensify as more companies send in field crews. The sounds of trucks, helicopters, and explosives become more evident, as will the increased demand for motels, bars, restaurants, service stations, medical services, and other facilities.

Following a discovery, drilling crews will remain in one area months to years to drill additional wells, and other personnel will be needed to construct and repair equipment. Development of a new gas field (e.g., 2 to 10 wells) could result in an estimated 80 workers associated with this stage of activity and another 50 jobs in construction, transportation, oil/gas services, and retail trade. At this stage, social impacts will become more evident.

Communities experience variations in the oil industry work force, expanded local employment opportunities, increased business activity, and greater demands for housing and public services. The influx of workers and their families will induce further economic and social changes in local institutions, traditions, life-styles, and community leadership patterns, especially in rural areas.

In most situations, if a new gas field is discovered near existing oil and gas fields and support services the economic and social impacts would be minor. The exception would be a major gas discovery. If a new gas field is discovered in an area without existing oil and gas fields the impacts could be moderate to significant depending on the level of development.

Petroleum operations are viewed by some people as inconsistent with other resource uses. They wish to preserve the scenic values and diverse opportunities for outdoor recreation. Frequent reasons for supporting oil and gas activities include the legal right to extract minerals from public lands, the national energy need, and the economic boost that new development provides.

Oil and gas operations can have an impact upon land use. These effects are generally centered in the communities nearest the oil and gas fields. By occupying the land, oil and gas companies could prevent or delay the disposal of private lands and subsequent transfer of ownership. Oil and gas operations can also affect land use by taking land out of forage or agricultural production; however the acreage affected is usually very small.

APPENDIX 2.2: OIL AND GAS STIPULATIONS

STANDARD OIL AND GAS STIPULATIONS

This appendix contains the Standard Oil and Gas Stipulations (MT 3109-1); the Raptor Stipulation for the Kevin Rim and the Sweet Grass Hills raptor habitat areas, including maps of the raptor habitat in the Kevin Rim and Sweet Grass Hills; the Rocky Mountain Front Raptor Guidelines; and Sample Conditions of Approval for Application for Permit to Drill.

This appendix details the stipulations which will be applied to all federal oil and gas leases in the planning area, regardless of surface ownership. These stipulations represent mitigation measures necessary to avoid or minimize adverse impacts to the human environment (40 CFR 1502.14(f) and 15002.16(h)). The stipulations prescribed for Federal mineral development in split estate situations apply only to the development of the Federal minerals. These stipulations do not dictate surface management. The mitigation measures present no restrictions on surface activities conducted for purposes other than those mineral development activities which are permitted, licensed, or otherwise approved by the Bureau of Land Management.

The raptor stipulation will be applied to new oil and gas leases within the raptor habitat identified on Maps A2.2a and A2.2b in this appendix.

Prior to approval of an APD on split estate, negotiations between the surface owner, operator, and BLM may be undertaken to incorporate specific needs of the surface owner. This may result in small adjustments to mitigative measures. Deviation from stipulations reducing the buffer zone or changing the timing restrictions may be allowed when a legitimate rationale supports the change.

If these mitigative measures are not effective in providing the desired degree of resource protection they may be revised at a future date. These stipulations may be waived or reduced if the resources are not present, the circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts. Exceptions to stipulations in any particular year may be specifically approved in writing by the authorized officer. In all cases the stipulations (including any modification) will be the least restrictive measures necessary to avoid unacceptable adverse impacts.

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
222 North 32nd Street
P.O. Box 36800
Billings, Montana 59107

_____
(Serial Number)

OIL AND GAS LEASE STIPULATIONS

ESTHETICS—To maintain esthetic values, all surface-disturbing activities, semipermanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the SMA.

EROSION CONTROL—Surface disturbing activities may be prohibited during muddy and/or wet soil periods. This limitation does not apply to operation and maintenance of producing wells using authorized roads.

CONTROLLED OR LIMITED SURFACE USE STIPULATION—This stipulation may be modified by special stipulations which are hereto attached or when specifically approved in writing by the Bureau of Land Management with concurrence of the SMA. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the SMA for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled, or **if absolutely necessary**, excluded. Use or occupancy will be restricted only when the Bureau of Land Management and/or the surface management agency demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the SMA has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include:

100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails.

500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams; 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies.

500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1 to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Crucial wildlife winter ranges during the period from December 1 to May 15, and in elk calving areas, during the period from May 1 to June 30.

300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites.

Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations.

On slopes over 30 percent, or 20 percent on extremely erodable or slumping soils.

_____ _____
(Date) (Signature)

NOTICE

CULTURAL AND PALEONTOLOGICAL RESOURCES—The Federal Surface Management Agency (SMA) is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the SMA, shall:

1. Contact the appropriate SMA to determine if a site specific cultural resource inventory is required. If an inventory is required, then;

2. Engage the services of a cultural resource specialist acceptable to the SMA to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the SMA for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface disturbing operation is submitted.

3. Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the SMA, surface occupancy on that area must be prohibited.

The lessee or operator shall immediately bring to the attention of the SMA any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the SMA.

ENDANGERED OR THREATENED SPECIES—The SMA is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the authorized officer of the SMA that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the SMA. An acceptable report must be provided to the SMA identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

APPENDIX 2.2: STIPULATIONS

ROCKY MOUNTAIN FRONT RAPTOR GUIDELINES

The failure of adult raptors to return to nest, eggs or young after human interference of an unfamiliar nature, is both serious and unpredictable. Because of this unpredictability, precaution should always be taken around any occupied nest or potential nesting territory.

Following are general recommended nest buffer zones related to various human activities. These recommended zones are not inclusive; details in terrain, vegetation, type and duration and familiarity of disturbance, specific temperament of individual birds, phase of nesting cycle, etc., all enter into determining the actual needed buffer zone at a given nest site. Preclusion of human activity at a given nest territory should be tempered with as many variables as possible and on a site specific basis.

TABLE 1

Activity	Recommended buffer zones
Off-road vehicle use	1/4 mi - 1/2 mi
Camping	1/4 mi - 1/2 mi
Hiking	1/4 mi - 1/2 mi
Rock climbing	1/2 mi - 3/4 mi
Road construction	1/2 mi - 1 mi
Controlled burning	1 mi - 2 mi
Trail clearing	1/4 mi - 1/2 mi
Building/construction	1/2 mi - 3 mi
Mining/heavy equip or blasting	1 mi - 3 mi
Logging	1/2 mi - 1 mi
Aircraft flights (low altitude)	1/4 mi - 1 mi
Seismic	

Nesting chronology for most raptors can be divided into five phases. The following summarizes each phase, general sensitivity to disturbance and comments. This table should be used with table 1 to temper activity and zone buffers.

TABLE 2

Phase	Activity	Sensitivity To Disturbance	Comments
I	Nest building includes courtship behavior	Extremely sensitive, period most likely to desert.	1. Most critical time period from the standpoint of desertion.
II	Egg laying	" "	2. Human disturbance of even limited duration may cause desertion, not only of nest sites, but also of long established territories.
III	Incubation	" "	3. Nest site tenacity is weakest on new territories or when birds first establish their territories. 4. Flushed birds may puncture, crush or eject eggs from nest 5. Flushed birds leave eggs unattended. Eggs susceptible to cooling, loss of moisture, overheating and predation.
IV	Hatching and nesting rearing	Moderately Sensitive	1. As hatching approaches most birds become tenacious with clutches of eggs. 2. Generally uncommon to desert a nest after young have hatched.
V	Post Fledging	Moderately Sensitive	3. 1st half of nestling period, young most susceptible to elements. 4. Flushed birds may trample young or eject them from nest. 5. Unattended nestlings may chill or overheat, susceptible to predation.

(Table 2 Continued)

Phase	Activity	Sensitivity To Disturbance	Comments
			6. Nestlings may miss feedings. May affect overall health of young birds.
			7. Premature Fledging-Threat to young prematurely leaving nest due to disturbance.

TABLE 3

Approximate nesting dates for some raptors that occur in the West-Hi-Line Area

Species	Approximate Dates of Nesting Season
*Golden Eagle	Feb 1 - July 30
*Northern Goshawk	April 15 - August 15
*Ferruginous Hawk	April 1 - July 30
*Mevlin	April 15 - August 15
*Prairie Falcon	Feb 15 - July 30
*Northern Saw-whet Owl	March 1 - August 30
*Coopers Hawk	April 15 - August 15
*Burrowing Owl	March 15 - July 15
Sharp-Shinned Hawk	May 1 - August 1
Swainson's Hawk	April 15 - August 1
Northern Harrier	April 1 - July 1
Screech Owl	March 1 - June 1
Great-horned Owl	Jan 1 - August 1
Short-eared Owl	March 1 - August 1

*Species of special interest or concern

PEREGRINE FALCON
CURRENTLY OCCUPIED NESTING HABITAT

No currently occupied peregrine falcon nesting eyries have been located in the West HiLine area, however, a historical nest site is known for the Kevin Rim.

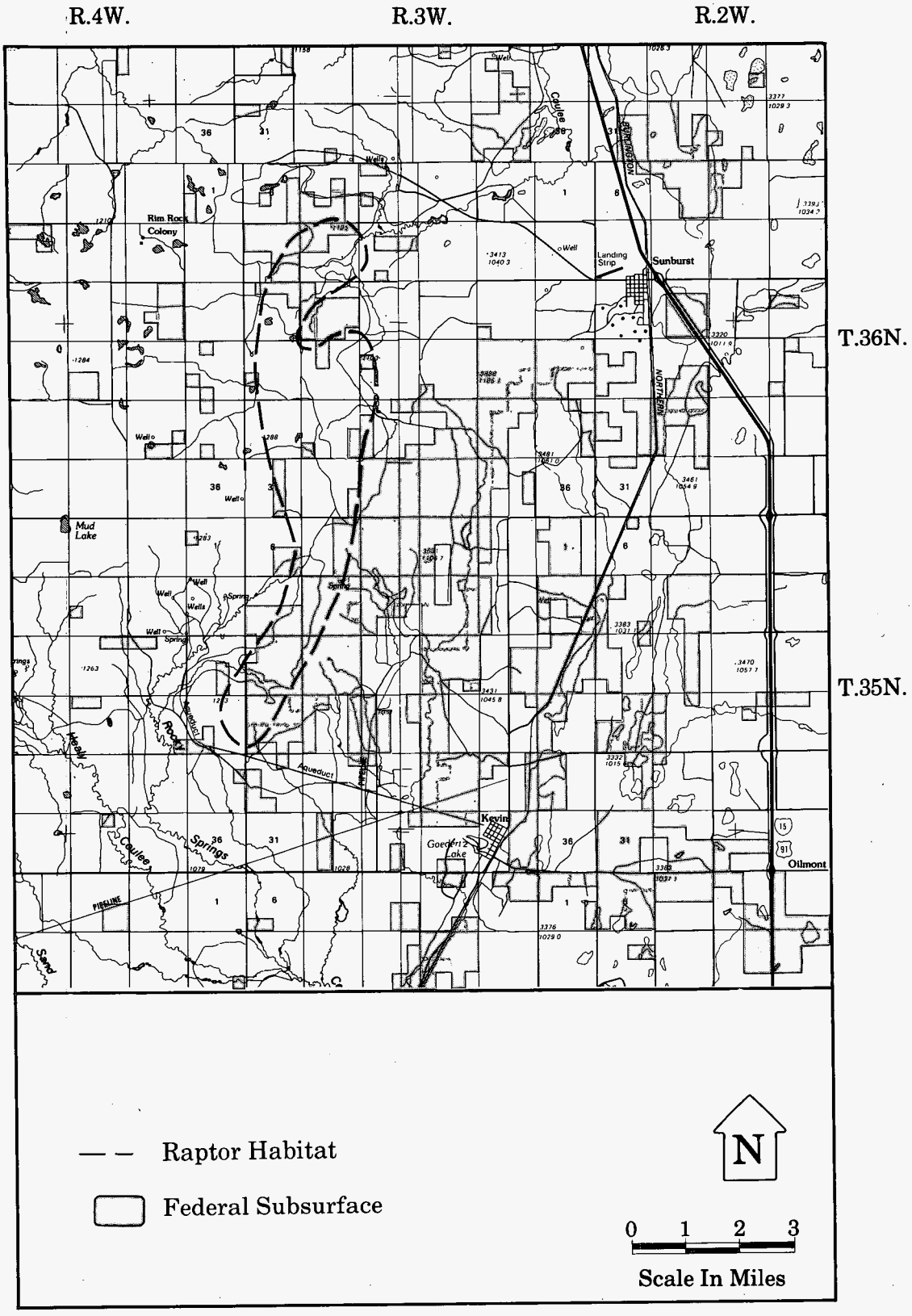
1. Should nesting peregrines be discovered, site specific nest management plans should be developed for each nesting territory. References used to develop these plans should be: the approved Recovery Plan and Guidance from the Montana Peregrine Falcon Working Group.

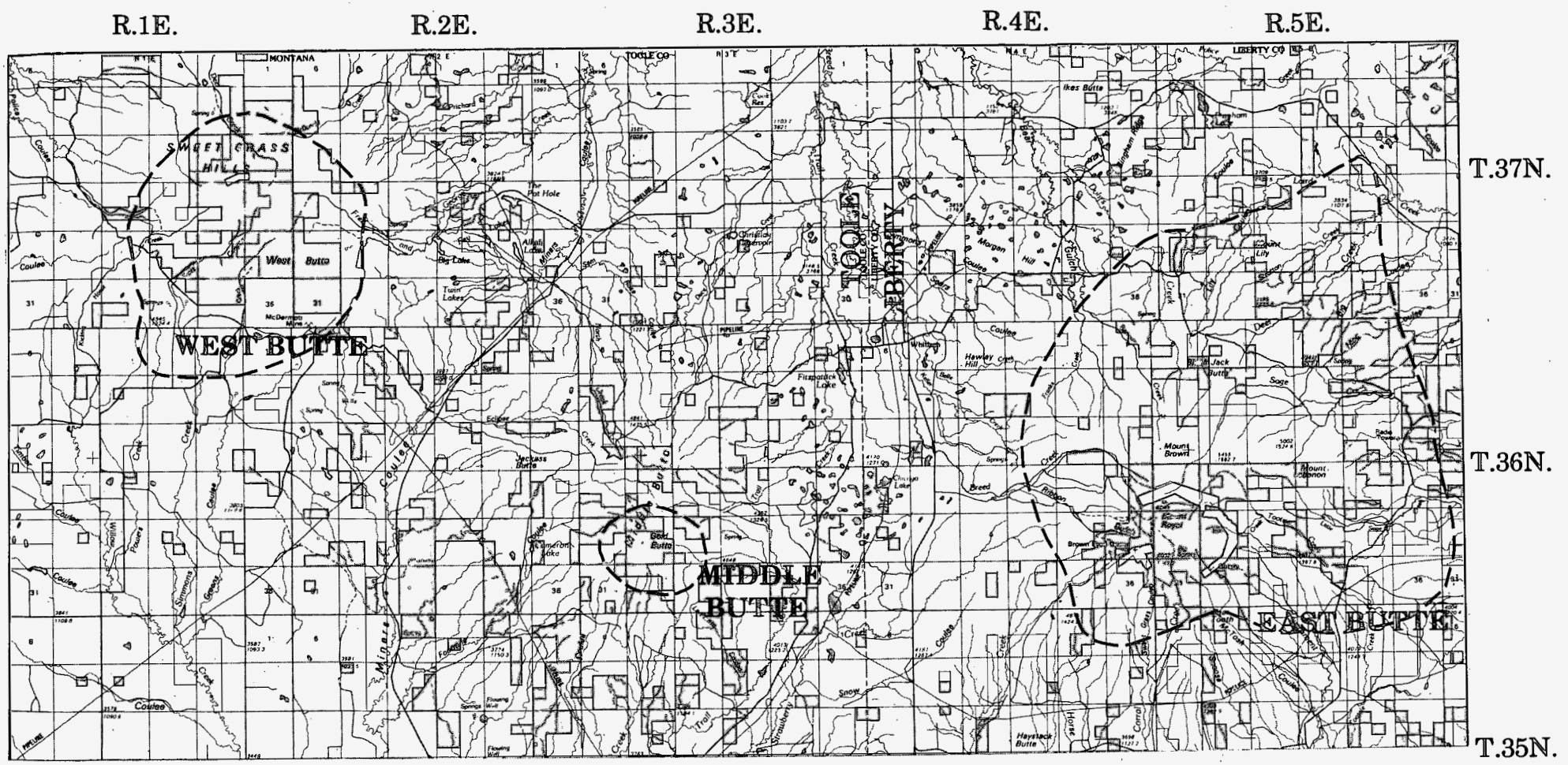
APPENDIX 2.2: STIPULATIONS
RAPTOR STIPULATION FOR THE KEVIN RIM AND SWEET GRASS HILLS

The following stipulation will be added to oil and gas leases within the identified raptor habitat in the Kevin Rim and Sweet Grass Hills areas (see Appenidx Figures 2.2A and 2.2B).

The Rocky Mountain Front Raptor Guidelines will be followed for all activities associated with this lease. At the time of APD approval, any portion or all of the site specific stipulations will be developed from the guidelines. Exceptions to stipulations in any particular year may be specifically approved in writing by the authorized officer.

Appendix Figure 2.2a Identified Raptor Habitat in the Kevin Rim Area.





Appendix Figure 2.2b Identified Raptor Habitat in the Sweet Grass Hills Area

APPENDIX 2.2: STIPULATIONS

SAMPLE CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

1. Site Specific Stipulations

   Location: Topsoil is to be removed and stockpiled.

   Rehabilitation: Non-Producer: After the pit contents have been hauled to a reservoir, the location is to be recontoured to the original shape of the terrain. The location is to be drill seeded with pure live seed mixture of 5 pounds per acre western wheatgrass and 3 pounds per acre green needlegrass, a total of 8 pounds per acre. Broadcast seeding requires doubling the above rates. Recommended seeding time is September 15 until soil freeze-up.

   Rehabilitation: Producer: The unused portion of the pad area will be recontoured to the original shape and seeded as described above. Production facilities on the well pad are to be painted a non-reflective earth tone color.

2. Notification Requirements (to be used in combination as field office determines).

   a. Notify this office verbally at least 8 hours before the well is spudded.

   b. Notify this office verbally not more than 48 hours after the well is spudded, or on the next regular work day.

   c. Notify this office at least 8 hours prior to running/cementing surface casing.

   d. For verbal plugging orders on drilling locations, notify this office at least 24 hours prior to plugging.

   BLM Representatives - Office Telephone No. (406) 538-7461

	Name	Home Telephone
Asst. District Mgr., Minerals		
Petroleum Engineer		
Environmental Scientist		

3. A complete copy of the approved Application for Permit to Drill (APD), including conditions, stipulations, and the H_2S contingency plan (if required) must be on the well site and available for reference during the construction and drilling phase.

4. This drilling permit is valid for either 1 year from the approval date or until lease expiration, whichever occurs first.

5. Dikes must be constructed to API standards around storage treatment facilities for liquids. The dike must be of sufficient size to contain the contents of the largest tank plus 1 day's production.

6. Dry Hole Marker

   Upon abandonment, the following marker is required. It must contain the same information as the well sign.

   __X__ A 4" diameter, 4' high pipe, welded to casing or set in cement.

   _____ A steel plate welded to surface casing at ground level.

   _____ A steel plate welded to surface casing 4' below ground level.

7. Additional requirements may be imposed if changes in operational and/or environmental conditions dictate.

   These special stipulations are subject to the Technical and Procedural Review (TPR) and appeals provisions of 43 CFR 3165.3.4.

Informational Notice

The following items are from the Federal Oil and gas regulations (43 CFR Part 3160) and from other public notices (Onshore Order No. 1, Notices to lessees). This is not a complete list, but is an abstract of some major requirements.

1. General Requirements (43 CFR 3162.2(a))

   The lessee shall comply with applicable laws and regulations; with the lease terms, Onshore Oil and Gas Orders; NTL's; and with other orders and instructions of the authorized officer.

2. Any substantial deviation from the terms of this APD require prior approval.

3. Well abandonment (3162.3-4, Onshore Order No. 1 - Sec. V)

   Prior approval for abandonment must be obtained. Initial approval for drilling operations may be verbal; subsequent notifications are to be on Form 3160-5 in triplicate.

4. Reports and Notifications (43 CFR 3162.4-1, 43 CFR 3162.4-3, Operating Form chart beginning of 43 CFR Part 3160).

   a. Form 3160-4, Well Completion or Recompletion Report (in duplicate) and two copies of logs, due 30 days after well completion.

   b. Form 3160-6, Monthly Report of Operations (one copy) due 10th day of second month following production month, beginning with month in which drilling operations are initiated.

   c. Production Startup Notification

      Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such Production has begun or resumed."

      The date on which production is commenced or resumed will be construed for oil wells as the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever first occurs; and, for gas wells as the date on

which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which gas is first measured through permanent metering facilities, whichever first occurs.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to $10,000 per violation for each day such violation continues, not to exceed a maximum or 20 days. See Section 109(c)(3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3162.4-1(b)(5)(ii).

5. Environmental Obligations (3162.5-1, Notices to Lessees 2B, 3A, 4A)

   a. With BLM approval, water produced from newly completed wells may be temporarily disposed of into unlined pits for up to 90 days. During this initial period, application for the permanent disposal method must be made in accordance with NTL-2B.

   b. Spills, accidents, fires, injuries, blowout and other undesirable events, as described in Notice to Lessee 3A, must be reported to this office within the time frames in NTL-3A.

   c. Gas may be vented or flared during emergencies, well evaluation, or initial production tests for a time period of up to 30 days or the production of 50 MMCF of gas, whichever occurs first. After this period, you must obtain approval from the authorized officer to flare or vent in accordance with NTL-4A.

6. Well Identification (43 CFR 3162.6)

   Each drilling, producing or abandoned well shall be identified with the operator's name, the lease serial number, the well number, and the surveyed description of the well (either footages or the quarter section, the section, township and range). The Indian allottee lessor's name may also be required. All markings must be legible, and in a conspicuous place.

7. Site Security on Federal and Indian oil and gas leases (43 CFR 3162-7-4)

   a. Oil storage facilities must be clearly identified with a sign, and tanks must be individually identified (43 CFR 3162.7-4(b)(6)).

   b. Site security plans must be completed within 30 days of production startup (43 CFR 3162.7-4(c)).

   c. Site facility diagrams must be filed within 30 days after facilities are installed or modified (43 CFR 3162.7-4(d)).

8. Confidentiality (3162.8)

   All submitted information not marked "CONFIDENTIAL INFORMATION" will be available for public inspection upon request. The exception is Indian lease information which is always considered confidential.

Thank you for your cooperation with the Lewistown District Office.

APPENDIX 2.3: ALLOTMENT LISTING

HAVRE RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Pblc Land	Acres Pblc Land	AUMs No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
5049	Phillips Co	C	160	27	110	C	Good	Non	S
5097	Liese/VanVoast	M	3215	750	152	C	Good	Prpsd	S
6001	Northwest	M	2617	528	105	C	Good	Non	S
6002	Pebble Crk	C	160	30	3	C	Good	Non	S
6004	Driftwood	C	440	79	30	C	Good	Non	S
6005	Davies Ranch	M	6048	1140	93	Y	Good	Prpsd	S
					340	C			
6006	West Unit	I	11023	2187	725	C	Fair	Exstg	RR
6007	Lyons Creek	M	1743	319	100	C	Gd/Fr	Prpsd	S
6008	Canada Line	M	1921	367	200	C	Good	Prpsd	S
6009	Meridian	M	781	163	90	C	Good	Prpsd	S
6010	East Fork	I	2050	633	3	C	Fr/Gd	Exstg	D/RR
6011	Bennett Coulee	M	3820	1034	150	Y	Good	Exstg	D/RR
					234	C			
					4	H			
6012	Border Unit	M	10116	2219	455	C	Gd/Fr	Exstg	RR
6013	Reservr Altmnt	M	1046	223	72	C	Good	Prpsd	S
6014	Silverbow	M	1520	322	100	C	Fr/Gd	Prpsd	S
6015	Upper 30 Mile	M	1181	197	125	C	Good	Exstg	DR
6016	Woody Coulee	C	200	40	27	C	Fair	Non	S
6017	Simons	M	798	153	37	C	Fr/Gd	Prpsd	S
6018	Cherry Ridge	I	8284	1668	340	C	Good	Exstg	DR
6020	Petrie Rnch	I	12959	2665	450	C	Fr/Gd	Exstg	DR
					100	Y			
					6	H			
6021	Customs	M	880	157	100	C	Good	Prpsd	S
6022	Uppr Woody Isl	I	2340	541	100	C	Good	Non	S
6023	Rifle Ranch	C	120	25	20	C	Good	Non	S
6025	Kiedrowski	C	40	6	6	C	Good	Non	S
6026	Borderline	C	595	185	50	C	Gd/Fr	Non	S
6027	Anderson Rnch	M	880	142	52	C	Good	Exstng	DR
6028	Elloam	C	1120	205	13	C	Fr/Gd	Non	S
6029	North Field	I	1600	316	68	C	Fair	Prpsd	S
6030	McClaren	M	1126	200	60	C	Good	Prpsd	S
6031	Bahr X 3	M	1191	229	40	C	Good	Prpsd	S
6032	Ola Creek	C	80	17	1	C	Good	Non	S
6033	Corral Creek	I	2380	463	150	C	Gd/Fr	Exstng	DR
					150	Y			
6034	Stevens	C	480	89	16	C	Good	Non	S
6035	U	M	1760	321	296	C	Good	Prpsd	S
6036	Only Forty	C	40	9	45	C	Good	Non	S
6037	Little Cherry	M	672	91	33	C	Good	Prpsd	S
6038	Magda North	C	441	95	50	C	Gd/Fr	Non	S
6039	Haugo	M	1436	301	189	C	Good	Prpsd	DR
6040	Diagonal	M	1242	314	1	C	Good	Prpsd	S
6041	Cherry Ridge	M	941	181	211	C	Good	Prpsd	S
6042	Red Top	C	120	22	2	C	Good	Non	S
6043	Mosquito	M	840	239	56	C	Gd/Fr	Prpsd	S
6044	Buckley Coulee	C	80	13	7	C	Fair	Non	S
6045	Turner	C	107	32	3	C	Good	Non	S
6046	Schellin Bros	I	1600	282	225	C	Fr/Gd	Prpsd	S
6047	Mud Lake	I	2360	672	240	C	Good	Exstg	DR
6048	Lodge Creek	M	1201	242	133	C	Fair	Prpsd	S
6049	Chinook Rsrvr	C	640	86	100	C	Good	Non	S
6050	South Field	M	919	168	58	C	Fair	Prpsd	S
6051	Tee Trail	M	900	154	46	C	Good	Prpsd	S
6052	No Chinook Cmn	M	1600	339	81	C	Fair	Exstng	DR
6053	Marker	M	480	102	43	C	Fair	Prpsd	S
6054	Skoyen	C	320	77	59	C	Fair	Non	S
6055	Lwr Chouteau Cl	I	1053	267	100	C	Fr/Gd	Exstng	DR
6056	Dry Fork	M	1640	333	80	C	Fair	Prpsd	S
6057	Holman	M	3910	997	300	C	Good	Prpsd	S
6058	Chouteau Cl	I	7280	1650	31	C	Good	Exstng	DR
6059	Boot Reservoir	C	480	103	35	C	Good	Non	S
6060	North	M	640	120	132	C	Good	Prpsd	S
6061	15 Mile Coulee	M	640	130	75	C	Gd/Fr	Non	S
6062	Tilleman Unit	I	1851	458	220	C	Gd/Fr	Prpsd	S
6063	Windbreak	M	1280	300	83	C	Good	Exstng	RR
6064	Miller	C	415	68	48	C	Good	Exstng	S
6065	Little Woody	C	400	77	100	C	Good	Non	S
6066	Hammer	I	1787	376	200	C	Fair	Prpsd	S
6067	FH	C	40	7	1	C	Good	Non	S
6068	Killam	C	480	118	30	C	Good	Non	S
6069	Second Bend	M	880	176	124	C	Fair	Prpsd	S
6070	Blaine County	C	859	192	100	C	Good	Non	S
6071	Hanson Flat	I	3360	751	184	C	Good	Exstng	RR
6072	Redrock Coulee	M	1120	252	102	C	Good	Prpsd	S
6074	Williams Bench	M	640	236	67	C	Good	Exstng	DR
6075	Reser	M	1720	352	77	C	Good	Exstng	DR

HAVRE RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
6076	Pidgeon Lease	C	320	64	32	C	Good	Non	S
6077	North	C	480	111	80	C	Good	Non	S
6078	Lodge Creek	C	160	35	3	C	Good	Non	S
6079	East	C	197	39	80	C	Good	Non	S
6081	Siemens	C	40	5	80	C	Good	Non	S
6082	Rabbit Hills	C	240	39	7	C	Good	Non	S
6083	Battle Creek	M	1413	193	270	Y	Good	Prpsd	S
6084	Andy Reservoir	C	438	58	13	C	Fair	Non	S
6085	Coal Coulee	C	643	147	27	C	Fair	Non	S
6086	Salmo	M	1914	308	270	Y	Good	Prpsd	S
6087	No Coal Coulee	M	1611	343	100	C	Gd/Fr	Prpsd	S
6088	W Coal Coulee	M	690	151	80	C	Fair	Prpsd	S
6089	Pond Coulee	M	480	97	70	C	Good	Exstng	D
6090	Zurich Park	M	465	81	25	C	Gd/Fr	Prpsd	S
6091	Two Step Altmnt	M	661	136	243	C	Good	Prpsd	S
6092	Road Bend	M	1160	249	87	C	Good	Prpsd	S
6093	Half Loaf	C	320	80	45	C	Good	Non	S
6094	Triangle	M	1450	309	70	C	Good	Exstng	DR
6095	Pauly Pasture	M	2069	341	295	C	Good	Prpsd	S
6096	West Fork	C	880	177	155	C	Good	Non	S
6097	Wayne Creek	C	2298	486	55	C	Good	Non	S
6098	Buckshot	C	1560	332	236	C	Good	Non	S
6099	Riggin Common	M	5636	1413	293	C	Good	Exstng	DR/S
6101	Modic	I	956	220	119	C	Fair	Prpsd	S
6102	East Nelson	C	440	91	85	C	Gd/Fr	Non	S
6103	North Refugee	M	600	127	154	C	Gd/Fr	Prpsd	S
6104	Stoplight	C	40	9	1	C	Fair	Non	S
6105	Little Jewel	M	320	64	14	C	Good	Prpsd	S
6106	Second	C	160	34	11	C	Good	Non	S
6107	Liese/VanVoast	M	2625	597	205	C	Good	Prpsd	S
6108	County Line	C	20	4	8	C	Good	Non	S
6109	Miles Butte	C	601	115	10	C	Gd/Fr	Non	S
6110	S Slash	B	640	143	28	C	Fair	Non	S
6111	Zurich Bench	M	3239	674	241	C	Good	Exstng	RR
6115	Greenland	M	1330	179	130	C	Gd/Fr	Prpsd	S
6116	Rodeo	C	737	108	49	C	Good	Non	S
6117	Siphon	C	145	28	2	C	Fair	Non	S
6118	Colony	C	200	46	13	C	Good	Non	S
6119	Lwr Wayne Crk	M	4695	1144	190	C	Good	Prpsd	DR
6120	Willie	M	1276	250	220	C	Good	Prpsd	S
6121	Exclosure	M	400	81	----	C	Good	Prpsd	S
6122	Black Crk	M	1120	266	200	C	Good	Prpsd	S
6123	Finger Lakes	M	1683	375	30	C	Gd/Fr	Prpsd	S
6124	Harlem	C	512	71	12	C	Good	Non	S
6125	Matador	M	1400	279	81	C	Good	Prpsd	S
6127	Railroad	C	200	95	124	C	Good	Non	S
6129	Llano	M	6082	1126	269	C	Good	Prpsd	S
6130	Savoy Crk	C	440	79	350	C	Good	Non	S
6131	Drake Creek	M	1840	378	90	C	Good	Prpsd	S
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6132	Milk Creek	M	2185	462	358	C	Good	Prpsd	S
6133	West Coburg	M	880	199	153	C	Good	Prpsd	S
6134	Coburg	M	1652	276	97	C	Good	Prpsd	S
6136	Junction	M	2587	658	222	C	Good	Prpsd	S
6137	Eureka	M	1441	317	215	C	Gd/Fr	Prpsd	S
6138	Hereford	C	40	12	2	C	Fr/Gd	Non	S
6139	Bowes Field	C	160	28	2	C	Gd/Fr	Non	S
6140	Pipeline	C	160	26	3	C	Fair	Non	S
6141	Miles Creek	C	120	48	8	C	Good	Non	S
6142	South Magda	C	40	10	2	C	Fair	Non	S
6143	Farm Road	C	80	14	140	C	Fr/Gd	Non	S
6144	County Road	C	342	82	82	C	Gd/Fr	Non	S
6146	North Fork	C	40	10	2	C	Good	Non	S
6147	Big Coulee	C	40	8	2	C	Fair	Non	S
6148	Mule Talk	C	50	9	2	C	Fair	Non	S
6150	Alkali Lake	M	1609	245	20	C	Gd/Fr	Prpsd	S
6152	Gap Creek	C	80	21	4	C	Good	Non	S
6153	Gap Creek	C	1345	162	14	C	Good	Non	S
6154	Birdtail Butte	C	561	134	17	C	Fair	Non	S
6155	McCann Butte	C	40	7	2	C	Good	Non	S
6157	Yrlng Pasture	C	381	46	185	C	Gd/Fr	Non	S
6159	Myrtle Butte	C	1257	267	60	C	Gd/Fr	Non	S
6160	North&McGuire	C	944	213	18	C	Fair	Non	S
6161	Halseth Field	C	480	92	88	C	Gd/Fr	Non	S
6163	Sawtooth Mtn	C	200	52	10	C	Fair	Non	S
6164	3-Mile Ridge	M	10321	1461	2	C	Good	Exstng	D
6165	TU Bench	M	2193	371	200	C	Good	Exstng	D
6166	Pioneer	M	600	60	60	C	Good	Non	S
6167	Tin Cup	I	560	64	167	C	Fr/Gd	Prpsd	S
6168	Al's Creek	I	3385	366	129	C	Fr/Gd	Prpsd	S
6169	Chimney Butte	I	7072	716	182	C	Fair	Prpsd	S

HAVRE RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
6171	Little Suction	I	1383	169	167	C	Fair	Prpsd	S
6172	Timber Ridge	I	2845	1807	263	C	Good	Prpsd	S
6173	Sand Creek	M	4497	701	269	C	Good	Prpsd	S
6173	Sand Crk Secl5	M	1011	201	214	C	Good	Prpsd	S
6174	Benchmark	C	240	39	20	C	Fair	Non	S
6175	Warrick Jnct	C	610	97	42	C	Good	Non	S
6176	Sherard Field	I	2232	412	6	C	Good	Exstng	DR
6177	Black Fork	C	190	39	10	C	Fair	Non	S
6178	Lightning	C	360	32	4	C	Gd/Fr	Non	S
6179	No Sherard Fld	C	160	35	3	C	Good	Non	S
6180	Bullseye	C	40	5	1	C	Fr/Gd	Non	S
6181	Bullwhacker	M	40774	4563	13	C	Good	Exstng	RR
6182	Hay Coulee	I	12959	1414	350	C	Gd/F	Exstng	RR
6183	Birch Creek	M	3023	284	33	C	Fair	Non	S
6184	Greens Bench	M	11224	1099	255	C	Good	Exstng	RR
6185	Scattered Trct	C	611	92	8	C	Good	Non	S
6187	Frk/Black Coulee	C	1013	135	90Y	C	Fair	Non	S
6189	North Ranch	C	420	69	420	C	Fair	Non	S
6190	Oliver	C	241	36	6	C	Fr/Gd	Non	S
6191	North Altmnt	C	40	9	1	C	----	Non	S
6192	N FrkLionCoulee	I	3924	592	590	C	Good	Exstng	HILF
6193	Lion Coulee	I	3050	410	----	C	Good	Exstng	D
6194	Spencer Ridge	I	7250	587	98	C	Gd/Fr	Exstng	D
6195	Corner	C	120	21	2	C	Good	Non	S
6196	Hooper Spring	C	40	6	1	C	Good	Non	S
6197	Laporte Place	I	2115	465	160	C	Gd/Fr	Exstng	DR
6198	Chase Hill Cmmn	M	923	113	100	C	Good	Exstng	DRR
6199	Greens Coulee	M	1487	109	100	C	Good	Exstng	DRR
6200	Chip Creek	C	1600	387	97	C	Good	Non	S
6201	Halley	M	7250	537	45	C	Gd/Fr	Prpsd	S
6202	Cummings Bench	M	2089	198	160	C	Gd/Fr	Prpsd	S
6203	Golf Bench	M	3364	396	200	C	Gd/Fr	Exstng	DR
6204	Blk Coulee Cmmn	M	4642	372	465	C	Fr/Gd	Exstng	D
6205	Moravec Indvl	C	440	14	51	C	Good	Non	S
6206	UpprBlckCoulee	M	1036	104	49	C	Good	Prpsd	S
6207	Ragland Ridge	C	1085	25	2	C	Fr/Gd	Non	S
6208	Lost Ridge	I	6254	382	171	C	Good	Exstng	-
6209	Barnard Ridge	I	4807	432	102	C	Fair	Prpsd	S
					3	H			
6210	Maxwell	C	100	10	1	C	Good	Non	S
6211	Black Butte	I	8345	742	200	C	Fr/Gd	Prpsd	S
6212	Ervin Ridge	I	13918	915	383	C	Fr/Gd	Prpsd	S
6213	Rankin Land	C	97	16	60	C	Gd/Fr	Non	S
6214	Lil Bllwhckr	I	21642	1652	350	C	Gd/Fr	Exstng	RR
6215	Dark Butte	I	4537	362	33	C	Good	Prpsd	S
6216	Pablo Rapids	I	1653	115	29	C	Fair	Prpsd	S
6217	Sneath Common	I	5686	283	240	C	Fair	Prpsd	S
6218	Sneath Common	I	3095	344	78	C	Fair	Prpsd	S
6219	Hoge	C	560	187	47	C	Good	Non	S
6220	8 Mile Bench	C	1466	367	52	C	Good	Non	S
6221	Deadman Rapids	I	1605	110	37	C	Good	Prpsd	S
6222	Gallatin Rapids	I	6959	287	6	C	Fair	Prpsd	S
6223	Hsr Hm Place	C	55	7	2	C	Fair	Non	S
6224	Upr Dphn Rapid	I	2400	84	54	C	Good	Prpsd	S
6225	Dauphine Rapids	M	210	12	28	C	Good	Prpsd	S
6226	Sharples Place	C	320	60	69	C	Good	Non	S
6227	Chouteau Coulee	I	5120	1013	375	C	Fair	Exstng	DR
6228	Fort	C	120	25	25	C	Good	Prpsd	S
6229	Guide	C	480	130	52	C	Good	Prpsd	S
6230	Hrs Crrl Coulee	M	1915	369	180	C	Good	Exstng	RR
6231	15 Mile	M	1640	325	190	C	Good	Exstng	RR
6232	30 Mile	M	920	176	190	C	Good	Exstng	RR
6233	Airstrip	M	2629	495	185	C	Gd/Fr	Prpsd	S
6234	Quarter	C	199	48	33	C	Good	Non	S
6235	MBEast Pasture	I	1709	321	137	C	Gd/Fr	Prpsd	S
6236	South	M	1584	322	70	C	Good	Prpsd	S
6237	Hldng Pstr CSGD	C	160	35	5	C	Good	Non	S
6238	Highway	C	310	65	45	C	Good	Non	S
6239	Forgey Creek	I	3840	555	9	C	Good	Exstng	DR
6240	Moses Indvl	C	100	24	53	C	Good	Non	S
6241	Pueblo	C	80	9	2	C	Good	Non	S
6242	Waylee	C	80	9	5	S	Fr/Gd	Non	S
6243	Big Bend	M	590	180	180	C	Fair	Exstng	S
6245	Stirrup	C	200	40	80	C	Good	Non	S
6246	Wadish Base	C	40	8	4	C	Good	Non	S
6247	West Wildhorse	C	114	32	8	C	Good	Non	S
6248	Grave	C	43	6	1	C	Good	Non	S
6249	Pwll Nrth Unit	I	1923	295	106	C	Gd/Fr	/Prpsd	S
6250	Milk Rvr	C	167	35	5	C	Fair	Non	S
6251	East Unit	I	5256	1121	415	C	Good	Exstng	RR
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HAVRE RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
6253	Fifty-Fifty	C	80	16	5	C	Good	Non	S
6254	Lost Bird	C	40	6	1	C	Good	Non	S
6255	Graber Unit	M	624	113		C	Gd/Fr	Prpsd	S
6256	Silver Lake	C	80	15	1	C	Good	Non	S
6257	North Zurich	M	1576	340	130	C	Gd/Fr	Prpsd	S
6258	Lateral	C	160	16	2	C	Good	Non	S
6260	Rankin Range	M	776	177	135	C	Gd/Fr	Prpsd	S
6261	Nvevo	C	320	62	131	C	Good	Non	S
6263	Reservoir Coulee	M	1765	397	68	C	Good	Existing	DR
6264	Mitchell	M	920	385	128	C	Good	Existing	DR
6265	Bench	C	40	7	1	C	Good	Non	S
6266	Section & Half	M	480	81	64	C	Good	Existing	DR
6267	Loma Ranch	C	101	20	2	C	Good	Non	S
6268	Thibadeau	M	920	222	37	C	Fair	Existing	DR
6269	N. Timber Ridge	M	1125	145	12	C	Good	Prpsd	S
6292	3-Mile	C	62	17	1	C	Good	Non	S
6301	North Snake	C	255	45	11	C	Good	Non	S
6302	Snake Butte	M	862	145	29	C	Good	Prpsd	S
6303	River Run	C	39	9	3	C	Good	Non	S
6304	Snake Btte Est	M	1117	194	39	C	Good	Prpsd	S
6341	Lil Bxeldr Cr	C	8	2	1	C	Fair	Non	S
6350	South Vimy	I	920	95	19	C	Fair	Prpsd	S
6406	Kaun	C	40	14	2	C	Good	Non	S
6407	Bootlegger	C	120	35	5	C	Good	Non	S
6408	Pinto	C	120	37	3	C	Good	Non	S
6410	Warrick	C	40	11	2	C	Good	Non	S
6411	PreferenceLnds	C	320	60	4	C	Good	Non	S
6412	Buckin	M	960	137	85	C	Good	Prpsd	S
6413	Little Birch	C	114	13	1	C	Gd/Fr	Non	S
6414	Triangle PU	M	280	51	220	C	Good	Prpsd	S
6415	Dogtown	I	1171	91	100	C	Fr/Gd	Exstng	RR
6416	Pigtail Coulee	I	1248	132	100	C	Good	Exstng	RR
6417	Trafalger	C	160	23	8	C	Fair	Non	S
6418	Blanchard	C	435	81	20	C	Fair	Non	S
6419	Kelly	C	200	55	10	C	Fair	Non	S
6420	Clinard Coulee	C	280	70	10	C	Fr/Gd	Non	S
6421	Henry	C	120	34	5	C	Good	Non	S
6422	N Hanging 5	C	329	100	7	C	Fair	Non	S
6424	Blazek	C	336	90	15	C	Gd/Fr	Non	S
6425	Piedras	C	1002	54	12	C	Good	Non	S
6426	Grouse	C	186	41	3	C	Fair	Non	S
6428	Osterman Henry	C	200	42	5	C	Good	Non	S
6429	Puma	C	156	53	7	C	Good	Non	S
6430	Braun	C	254	29	4	C	Good	Non	S
6431	Cougar	C	290	107	14	C	Good	Non	S
6432	Arroyo	C	553	139	23	C	Fair	Non	S
6433	Valkyrie	C	80	5	1	H	Fair	Non	S
6434	Cabin	I	1874	429	50	C	Fair	Prpsd	S
6435	Kng Cle St Tr	C	629	66	6	C	Good	Non	S
6436	Lasso	C	40	8	1	C	Good	Non	S
6437	Beaudette	C	40	10	1	C	Fair	Non	S
6438	Hackamore	C	319	54	7	C	Fair	Non	S
6439	Homestead Coule	I	1527	408	90	C	Fair	Prpsd	S
6440	Latigo	C	400	66	11	C	Fair	Non	S
6441	Stevens	C	347	58	17	C	Good	Non	S
6442	Marias Rvr 1	C	682	182	25	C	Fair	Prpsd	S
6443	Klondike	M	1200	200	40	C	Good	Prpsd	S
6444	Sheep Coulee	M	1771	591	118	C	Good	Prpsd	S
6445	Marias Breaks	C	178	40	6	C	Fair	Non	S
6446	Nome	I	1223	185	40	C	Fair	Prpsd	S
6447	Est Lnsme Lake*	C	320	80	6	C	Fair	Non	S
6448	Christofferson*	M	5096	1635	225	C	Good	Prpsd	S
6450	Ihmsen Well*	M	1669	668	100	C	Fair	Prpsd	S
6451	Lnsme Fair Farm*	M	1982	368	76	C	Fair	Prpsd	S
6452	Grass Seed**	M	1080	300	100	C	Fair	Prpsd	S
6453	Hardware*	M	438	176	43	C	Fair	Prpsd	S
6454	Two Bit*	C	40	10	1	C	Good	Non	S
6455	Haystack*	M	2643	1057	151	C	Good	Prosd	S
6456	Reservation	C	244	34	3	C	Good	Non	S
6457	Edwards Lease	C	300	43	3	C	Good	Non	S
6458	Bear Paw	C	25	4	1	C	Good	Non	S
6459	Bullhook	C	40	8	1	C	Fair	Non	S
6460	Kremlin	C	80	27	7	C	Fair	Non	S
6461	Fresno	C	120	16	2	C	Good	Non	S
6462	Long Beach	C	78	25	6	C	Fair	Non	S
6464	Creedman Coulee	C	80	16	3	C	Fair	Non	S
6465	Signal	C	174	35	6	C	Fair	Non	S
6466	Haugen	C	40	12	1	C	Fair	Non	S
6467	Hot Iron	C	40	7	2	C	Fair	Non	S
6468	Lobo	C	720	180	45	C	Fair	Non	S
6470	Nagelhus Lease	M	1600	163	23	C	Fair	Prpsd	S
6471	Wildhorse Lake	M	8794	691	173	C	Fair	Prpsd	S

HAVRE RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
6472	Wildhorse	M	960	108	27	C	Fair	Prpsd	S
6475	Vimy Point	C	160	22	3	C	Fair	Non	S
6476	Chauvet	C	120	22	7	C	Fr/Gd	Non	S
6477	Dietz	C	286	30	3	C	Good	Non	S
6478	Teton	C	560	77	15	C	Fair	Non	S
6479	Shamrock	C	40	14	3	C	Fair	Non	S
6480	Jacobsen	C	40	14	25	C	Good	Non	S
6481	Jurenka	C	130	7	1	C	Good	Non	S
6482	Badger	C	400	46	15	C	Good	Non	S
6483	Tunis	C	40	12	2	C	Good	Non	S
6484	Sunset	C	600	16	13	C	Fair	Non	S
6485	Marias River 2	C	240	38	6	C	Gd/Fr	Non	S
6486	Lazy K6	C	181	40	8	C	Good	Non	S
6487	Melby	C	120	32	8	C	Unsu	Non	S
6488	W Lonesome Lk	C	120	48	32	C	Fair	Non	S
6490	Fork Coulee	I	1096	193	27	C	Fair	Non	S
6491	Pine Tree	C	80	18	3	C	Good	Non	S
6494	Red Wing	C	18	3	1	C	Good	Non	S
6524	Anchor's Isl	C	40	9	1	C	Good	Non	S
6541	Roadside	C	40	6	1	C	Good	Non	S
TOTALS									
	TOTAL		525733	86092					

*All BR Acres
**40 Acres BLM and 1040 Acres BR

HAVRE RESOURCE AREA - UNALLOCATED ALLOTMENTS

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No. of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
6331	Unallocated	C	118	-0-	-0-	---	--	Non	S
6332	"	C	37	-0-	-0-	---	--	"	"
6333	"	C	26	-0-	-0-	---	--	"	"
6334	"	C	40	-0-	-0-	---	--	"	"
6335	"	C	40	-0-	-0-	---	--	"	"
6336	"	C	40	-0-	-0-	---	--	"	"
6337	"	C	25	-0-	-0-	---	--	"	"
6338	"	C	35	-0-	-0-	---	--	"	"
6339	"	C	11	-0-	-0-	---	--	"	"
6340	"	C	1	-0-	-0-	---	--	"	"
6341	"	C	4	-0-	-0-	---	--	"	"
6342	"	C	40	-0-	-0-	---	--	"	"
6343	"	C	40	-0-	-0-	---	--	"	"
6344	"	C	40	-0-	-0-	---	--	"	"
6345	"	C	40	-0-	-0-	---	--	"	"
6501	"	C	80	22	-0-	---	-G	"	"
6503	"	C	40	12	-0-	---	-G	"	"
6505	"	C	33	10	-0-	---	-G	"	"
6507	"	C	40	4	-0-	---	-G	"	"
6509	"	C	80	12	-0-	---	-F	"	"
6512	"	C	40	5	-0-	---	-F	"	"
6513	"	C	40	9	-0-	---	-F	"	"
6514	"	C	40	6	-0-	---	-F	"	"
6515	Unallocated	C	29	1	-0-	---	-F	Non	S
6516	"	C	40	7	-0-	---	-G	"	"
6518	"	C	40	12	-0-	---	-G	"	"
6519	"	C	15	9	-0-	---	-G	"	"
6520	"	C	80	7	-0-	---	-F	"	"
6521	"	C	40	7	-0-	---	-F	"	"
6522	"	C	45	19	-0-	---	-G	"	"
6524	"	C	40	9	-0-	---	-F	"	"
6527	"	C	80	18	-0-	---	-G	"	"
6528	"	C	40	6	-0-	---	-F	"	"
6529	"	C	40	8	-0-	---	-F	"	"
6530	"	C	40	7	-0-	---	-G	"	"
6531	"	C	40	8	-0-	---	-F	"	"
6532	"	C	42	11	-0-	---	-G	"	"
6533	"	C	40	6	-0-	---	-F	"	"
6534	"	C	71	6	-0-	---	-F	"	"
6535	"	C	80	7	-0-	---	-F	"	"
6536	"	C	40	10	-0-	---	-G	"	"
6540	"	C	59	15	-0-	---	-G	"	"
6542	"	C	40	11	-0-	---	-F	"	"
6548	"	C	40	6	-0-	---	-F	"	"
6554	"	C	80	19	-0-	---	-F	"	"
6555	"	C	40	12	-0-	---	-F	"	"
6557	Unallocated	C	40	9	-0-	---	-F	Non	S
6558	"	C	40	10	-0-	---	-F	"	"
6559	"	C	40	10	-0-	---	-F	"	"
6564	"	C	40	7	-0-	---	-F	"	"
6567	"	C	40	4	-0-	---	-G	"	"
6568	"	C	40	8	-0-	---	-G	"	"
6577	"	C	10	3	-0-	---	-F	"	"
6581	"	C	80	10	-0-	---	-F	"	"
6568	"	C	40	5	-0-	---	-F	"	"
	TOTAL		2401	357					

GREAT FALLS RESOURCE AREA ALLOTMENTS

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No. of Lvstk	Lvstk Class	Vegt Cond	AMP Status
6340	India	C	607	203	-	-	Fair	
6348	Home Place	C	216	33		C	Fair	Prpsd
6349	Falcon	C	1220	193		C	Fair	Prpsd
6350	B & D	C	1450	229		C	Fair	Prpsd
6351	Halvorson	C	40	14	2	C	Good	
6352	Dahlen	C	160	36	4	C	Fair	
6353	Kevin Rim	C	1382	220	5	C	Fair	Prpsd
6354	India	C	640	171	14	C	Fair	
6355	East	C	1661	263	75	C	Fair	Prpsd
6356	India	C	400	116	10	C		
6357		C	80	15	3	C	Pr/F	
6358	Wilma	M	2874	358	30	C		
6359	Rimrock	C	404	125	10	C	Good	
6360	India	C	720	150	12	C		
6361	Saltbush	C	320	53	4	C	Fair	
6362	Virden Lake	C	1409	89	30	C		
6363	Open Flat	C	560	187	31	C	Fair	
6364	Shelby	C	905	36	7	C		
6367	Big Damp	C	833	137	19	C	Fair	
6368	India	C	156	28	4	C	Fair	
6369	Roun	C	181	37	11	C	Fair	
6370	Red Deer	C	458	107	6	C	Good	
6371	India	C	247	75	6	C	Good	
6372	Hurley	C	40	13	18	S	Fair	
6373	Oilmont	C	435	145	1	C	Fr/Gd	
6374	Sandon	M	480	120	20	C	Gd/Fr	Existing
6375	Psalmist	C	80	8	1	C	Fair	
6376	Jimmy	C	120	40	10	C	Good	
6377	Henry	C	40	5	10	S	Fair	
6378	Upper Marias	C	2689	245	30	C		
6379	India	C	320	80	6	H	Fair	
6380	Keil	C	186	62	21	C	Fair	
6381	M and M	C	197	44	6	C	Fair	
6383	Dry Fork	C	32	7	1	C	Fair	
6384	Myron	C	62	10	2	C	Fair	
6385	India	C	240	37	3	C	Fair	
6386	Mack	C	360	25	8	C	Fair	
6387	India	C	203	68	6	C	Fair	
6388	India	M	120	37	6	C	Exclt	
6389	West Butte	M	1870	312	26	C		
6390	Mickey	C	200	37	12	C	Exclt	
6391	Fey Lease	C	40	7	1	C	Exclt	
6392	Antelope	C	322	100	8	C	Fair	
6393	Arrowhead	C	80	15	5	C		
6394	Blackfoot	M	327	32	8	C	Exclt	
6395	Mt. Royal	I	2177	192	42	C	Fair	Prpsd
6396	Marias Bridge	C	1619	324	165	C		
6397	Oswood	M	657	36	5	C	Exclt	
6398	Bald Eagle	M	1131	82	15	C		
6399	Buffalo	M	3763	1255	153	C	Fair	Prpsd
6402	Link	C	237	34	4	C	Fair	
6403	Denson Ranch	C	680	66	17	C	Fair	
6404	India	C	40	10	3	C	Fair	
6405	North Star	C	443	70	30	C	Fair	
6406	West Virden		40	12	1	C	Good	
6463	Liberty		4	1	13	C		
6473	Sunburst	C	440	10	3	C	Fair	
6474	Good	C	80	27	5	C	Fair	
6489	Gold Eagle	M	210	14	3	C	Fair	
6492	India	C	80	18	3	C	Fr/Gd	
6493	Hill		595	120	32	C		
6495	Fowler	C	77	12	2	C		
6496	Cut Bank	C	1069	1	1	C		
6569	Outlook School	C	200	15	3	C		
6570	McPhillips	C	40	8	1	C		
	TOTAL		143768	6631				

ALLOTMENTS ALONG UMNWSR JUDITH RA

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
0010	Blind Canyon	I	2485	294	101	C	Exl/Gd/ Fair	E	DR
0025	Demars	M	4640	351	89	C	Exl/Gd	E	DR
0031	Woodhawk	M	27359	3192	744	Y	Exl/Gd	E	DR
					150	C	Fair		
					39	H			
0045	Mattuscheck	M	6782	734	238	C	Exl/Gd	E	RR
					5	H	Fair		
0046	River	M	6627	534	150	C	Exl/Gd	E	DR
0066	Iron City Island	M	768	92	60	C	Gd/Fr	E	DR
0067	PN Ranch	M	14846	1931	1470	C	Exl/Gd	E	DR
5122					275	X			
5123									
5126									
5127									
0081	Reed Coulee	I	2850	688	115	C	Gd/Fr	E	DR
0081	Stultz	M	4179	500	123	C	Gd/Fr	E	RR
9649	ABN Ranch	C	236.93	66	8	C	Gd/Fr	None	S
9662	Henderson	C	800	97	8	C	Gd/Fr	None	X
9681	Clark	C	160	23	2	C	Gd/Fr	None	S
9687	Dammel	C	905.37	137	60	C	Gd/Fr	None	S
9714	Stultz	C	1173.97	172	14	C	Gd/Fr	None	Y
9729	Hicks	C	819.86	104	19	C	Gd/Fr	None	S
9779	Quenell	C	625	94	11	C	Gd/Fr	None	Y
9785	Last Chance Bench	C	1234	139	12	C	Fair	P	Yr Rd
9826	Flat Creek	M	1120	160	64	C	Fair	E	S
9838	Labarge Rocks	M	2568.53	329	130	C	Gd/Fr	P	S
9658									
9839	Sheepshed Coulee	M	4147	364	190	C	Gd/Fr	E	DR
	TOTAL		84327	10001					

ALLOTMENTS ALONG UMNWSR PHILLIPS RA

(S)Seasonal (RR)Rest Rotation (D/RR)Deferred/RR (DR)Deferred Rotation

Nmbr	Altmnt Name	Mgt Cat	Acres Pblc Land	AUMs Pblc Land	No of Lvstk	Lvstk Class	Vegt Cond	AMP Status	Crrnt Grzng System
5609	Cabin Creek	I	14510	1156	418 58	Y C	Good	Extng	D/RR
5610	Antelope Creek	I	43754	4475	535	C	Gd/Fr	Prpsd	S
	TOTALS		58264	5631					

APPENDIX 2.6: MITIGATION MEASURES FOR VEGETATION (A), WILDLIFE (B), AND CULTURAL RESOURCES (C)

APPENDIX 2.6A: VEGETATION MITIGATION MEASURES

All rights-of-way, leases, permits or surface disturbing activities will have stipulations for riparian protection and a rehabilitation plan.

Topsoil will be stockpiled when a surface disturbing action begins and will be replaced at the completion of the project.

Tractor logging will be limited to slopes with average gradient of less than 40%.

Clearcuts will be limited to slopes with an average of gradient of less than 30%.

Clearcut blocks will be less than 10 acres.

If available, a minimum of 3 snags/acre, plus replacement snags will be left for wildlife use on all sale and thinning areas.

All road construction will be laid out by BLM personnel in accordance with MSO 5424-4 specifications.

Streamside "green" strips would be left along all perennial streams. Minimum strip width would be the average height of the overstory. The strip width will be determined by an on site evaluation during the activity development phase.

All wildfires of 100 acres or more will be reviewed by the district rehabilitation team to determine rehabilitation needs.

Within the UMNWSR Corridor the following restrictions will apply:

Fire fighting equipment is restricted to existing roads: no red fire retardant will be used in the White Rocks section of the UMNWSR Corridor.

APPENDIX 2.6B: WILDLIFE MITIGATION MEASURES

The following standard stipulations to mitigate impacts to wildlife will be applied to surface disturbing activities in the Kevin Rim, Sweet Grass Hills and in important wildlife winter range areas. These stipulations will be appended to other areas if monitoring and inventories indicates a need. These stipulations will be applied at the activity level phase after an on site evaluation indicates the presence of the specific resource.

No surface occupancy for leasable mineral exploration and other surface disturbing activities will be allowed on mule deer and antelope winter and fawning ranges from December 1 - May 15 and May 1 - June 30.

No surface occupancy for leasable mineral exploration and other surface disturbing activities allowed on important elk habitats (Sweet Grass Hills) during the following seasonal use periods (locatable mineral activity will be mitigated to the extent possible to prevent unnecessary and undue degradation to these resource values:

Winter ranges December 1 - May 15
Calving areas May 1 - June 30

Time restrictions on surface disturbing activities may be applied on nesting areas and strutting grounds of sage and sharp-tailed grouse from March 1 to June 30.

Surface use may be controlled or excluded with a ¼ mile zone of identified essential habitat of federal and state listed threatened, endangered and sensitive species; at the present time this stipulation will primarily be applied to raptor species.

Currently there are no known occupied peregrine falcon aeries in the area; however, historical and potential nest sites are known for the Kevin Rim, Marias and Missouri River Corridors and the West Butte of the Sweet Grass Hills. In the event a peregrine falcon is found or introduced the BLM will adhere to the approved recovery plan and guidance from the Montana Peregrine Falcon Working Group.

APPENDIX 2.6C: CULTURAL MITIGATION MEASURES

All surface disturbing actions could require a cultural inventory prior to approval of the action. The guidelines from the Northern Glaciated Plains Statistical Survey will apply.

Impacts to significant cultural resources will be avoided where possible and feasible. Where impacts cannot be avoided, impacts to cultural resources will be mitigated when BLM determines it necessary by employing appropriate procedures taken from the Secretary of Interior's standards for historic preservation projects.

National Register of Historic Sites and other significant sites within the UMNWSR Corridor in immediate danger of loss due to natural and/or human disturbance will be monitored, avoided and/or excavated.

Impacts to Native American religious sites will be avoided or mitigated where possible or necessary.

If cultural resources are encountered during surface disturbing activities construction operations will cease until BLM can evaluate the find and salvage if necessary.

All cultural surveys and excavations done on public lands will be performed by holders of valid archaeological permits.

APPENDIX 3.1: LEGAL DESCRIPTION OF THE KEVIN RIM AREA

T. 35 N., R. 3 W., PMM
Section 3: Lots 3, 4, SW¼NW¼, W½, SW¼
Section 4: Lots 1-4, S½N½, S½
5: 1, 2, S½NE¼, SE¼
6: SE¼
7: Lots 3, 4, E½SW¼, SE¼
8: NW¼NE¼, S½, NE¼, W½, W½SE¼, SE¼SE¼
17: All
18: Lots 3, 4, E½, E½W½
19: Lots 1, 2 NW¼, NE¼, S½NE¼, E/2NW¼
20: NE¼NE¼, NE¼NW¼

T. 36 N., R. 3 W., PMM.
Section 4: Lots 3, 4
17: S½NE¼, SE¼NW¼, E½SW¼, N½SE¼, SW¼, SE¼
20: E½NW¼
22: SW¼SE¼
27: N½NW¼, E½SW¼, SW¼SW¼
28: N½NE¼, SW¼, NW¼, W½SW¼, SE¼SE¼

APPENDIX 3.2: LEGAL DESCRIPTION OF THE SWEET GRASS HILLS

West Butte of the Sweet Grass Hills.
T. 37 N., R 1 E., PMM.
Section 13: Lots 4, 5 SE¼SW¼, SW¼SE¼
14: Lots 1-3, W½NE¼, E½SW¼, SW¼SW¼
15: SE¼SE¼
24: Lots 1-4, W½E½, NE¼NW¼, E½SW¼, SW¼SW¼
25: Lots 1-3, 5,6,8-10, SW¼NE¼, S½NW¼, NE¼SW¼, NW¼SE¼
26: SE¼NE¼

T. 37 N., R 2 E., PMM.
Section 19: Lot 4
20: NW¼NE¼, NE¼NW¼
30: Lot 1-4, S½NE¼, SE¼NW¼,E½SW¼, SE¼
31: Lots 1-3, NE¼, E½NW¼, NE¼SW¼, N½SE¼

East Butte of the Sweet Grass Hills.
T. 36 N., R. 4 E., PMM.
Section 13: NW¼NE¼, W½
24: Lots 1-4, N½NE¼, SW¼NE¼, NE¼NW¼
25: Lots 1, 2, 4, 6, E½NE¼
36: Lots 1-3, 5

T. 36 N., R. 5 E., PMM.
Section 6: SE¼NE¼, E½SE¼
7: E½
8: W½SW¼
17: W½W½
18: N½NE¼
19: Lots 2-9, PATENT 20510, PATENT 20511, SE¼SW¼
20: Lots 1-5, PATENT 20511, W½NE¼, SE¼NE¼, NW¼, NW¼SE¼
29: Lots 1-5, 8-10, SW¼NW¼, N½SW¼, SW¼SW¼
30: Lots 1-4, S½NE¼, E½W½, SE¼
31: Lot 1, E½NE¼, NW¼NE¼, NE¼NW¼
32: Lots 1-3, E½NE¼, SW¼NE¼

TOTAL 4,760 Acres

Middle Butte of the Sweet Grass Hills

T. 36 N., R. 3 E., PMM
Section 29: SW¼NE¼, S½NW¼, SW¼, W½SE¼, NE¼SE¼
30: SE¼SE¼
31: NE¼NE¼
32: NW¼NE¼, N½NW¼

TOTAL 600 Acres

ACEC Total Federal Surface Acres 7,952

APPENDIX 3.4

HARDROCK MINERAL DEVELOPMENT POTENTIAL CRITERIA

Criteria	Score
1. Geologic conditions (structure, stratigraphy, mineralogy, geologic province, etc.) favorable for mineral occurrence.	1
2. Historic mining district with past exploration, development or production. May be indicated by patented claims, old workings, or production records.	1
3. Recent mineral locating, staking, leasing or property acquisition activity.	1
4. Recent exploration activity (drilling, sampling, geochemical, geophysical, etc.)	1
5. Anamalous mineral concentrations present, or strongly indicated; either significant in extent or intensity that may warrant further investigation (ore deposit not necessarily defined).	2
6. The mineral of interest indentified has a current or potential market.	2
7. An ore deposit has been identified (economically/technically extractable).	3
8. Area contains ore reserves associated with an existing, operating mine.	3
TOTAL POSSIBLE	14

DEVELOPMENT POTENTIAL RATING

Category	Total Score
None/Unknown	0
Low	1 to 4
Moderate	5 to 8
High	9 to 14

Solid mineral development potential was assessed using data collected from various sources, including; publications, company exploration programs, field observations and BLM records. Individual parcels of land were then evaluated using the eight criteria listed in this appendix. Development potential boundaries were drawn along the smallest legal subdivisions allowed by the data. Attention was focused on those areas where BLM is the surface managing agency. Areas of private surface/federal minerals, or private surface/private minerals are included when it would be inconvenient not to do so.

Some facts should be noted when discussing mineral development potential. It is not the same as occurrence potential which predicts the likelihood for the presence of the mineral without necessarily implying whether it can be economically exploited. Development potential is an economic determination that is fixed by the specific market conditions, available mining technology and the mineral(s) of interest at the time of the determination. Changes in marketability of a mineral commodity, or an improvement in mining methods, may greatly affect the development potential of an area. Analyzing an area for different mineral commodities may yield different development potentials. For example an area with high development potential for precious metals such as gold and silver may have low, or no, development potential for base metals such as copper and lead. The areas assessed in this document are analyzed using the mineral commodity with the highest level of interest.

Another factor affecting the determination is the availability of geologic data. The development potentials depicted are based on the best readily available data, and are a function of the quality and quantity of that data. As additional data is generated in an area it may necessitate a change in the development potential.

APPENDIX 4.2:
BIOLOGICAL ASSESSMENT
WEST HILINE RESOURCE MANAGEMENT PLAN

INTRODUCTION

This biological assessment for threatened and endangered wildlife species evaluates impacts associated with resource management proposals which are being published in the West HiLine Resource Management Plan (RMP) and Environmental Impact Statement (EIS). This biological assessment is in response to the requirements of Section 7(c) of the Endangered Species Act. The West HiLine Planning Area (see Fig. 1.1) includes the entire Havre Resource Area (Hill and Blaine Counties and that portion of Chouteau County north of the Missouri River) and that portion of the Great Falls Resource Area located in Glacier, Toole and Liberty Counties. Small portions of the Judith Resource Area in Fergus County and the Phillips Resource Area in Phillips County were included in this project when management of the Upper Missouri National Wild and Scenic River (UMNWSR) Corridor, and its related lands became an issue in this RMP.

The planning area is located in the north central portion of Montana. It is bounded on the north by Canada, on the east by the Phillips Resource Area, on the south by the Judith Resource Area and on the west by Glacier National Park.

The planning area encompasses 11,285,024 acres, of which 626,098 surface acres (5.5%) and 1,328,014 subsurface acres are administered by the BLM. The majority of landownership is private. Other significant landownerships include the Blackfeet, Rocky Boys and Fort Belknap Indian Reservations, small portions of Glacier National Park, and the Lewis and Clark National Forest, and some state lands. Table 1.1 in the draft RMP EIS portrays the ownership by resource area within the planning area.

This plan only covers the management of public lands administered by the BLM. It does not affect private lands or lands administered by other federal agencies, within the planning area. The West HiLine RMP will provide a comprehensive framework for managing public land and resources administered by the Bureau of Land Management during the next ten or more years. The RMP contents are primarily focused on resolving five key resource management issues. These issues are:

1. Land Tenure Management
2. Off-Road Vehicle Management
3. Right-of-Way Location
4. Emphasis Areas, Kevin Rim, Sweet Grass Hills and Cow Creek
5. Upper Missouri National Wild and Scenic River Management

Four alternatives are presented for analysis within the RMP. Alternative A represents the No Action or Continuing Current Management Alternative; Alternative B presents a combination of management guidance and actions that would favor the use of public land resources; Alternative C presents a combination of management guidance and actions which favors the protection and preservation of public land resources and Alternative D presents a balance of management guidance and actions proposed in the previous three alternatives.

Each alternative combined with the Management Common to All Alternatives guidance will provide management direction for all resources.

AFFECTED SPECIES

According to a letter from the U. S. Fish and Wildlife Service (FWS) dated February 20, 1987, the following listed threatened and endangered (T&E) species may be present in the project area.

Listed Species	Status	Expected Occurrence
Black-footed Ferret (Mustela nigripes)	Endangered	Possible resident of prairie dog towns.
Bald Eagle (Haliaetus leucocephalus)	Endangered	Migration, wintering
Peregrine Falcon (Falco peregrinus)	Endangered	Migration
Piping Plover (Charadrius melodus)	Threatened	Possible resident

A brief description of the occurrence of these species can be found on pages 51-52 in the Draft RMP/EIS. No black-footed ferrets are known to occur in the project area. Approximately, 36 prairie dog towns have been identified in the area, most being isolated and less than forty acres. These do not occur in complexes and probably lack an adequate prey base for ferrets. Only one dog town in Blaine County may contain an adequate prey base; it is approximately six hundred and twenty five acres, one hundred of which occur on public land. However, no ferrets or ferret sign was found on winter surveys conducted in 1982 and 1986. No intensive summer inventories have been made.

Bald eagles are a fairly common migrant and wintering bird. They occur throughout the project area during fall and spring migration. The earliest fall observation date on record in the area is October 4th, while the latest spring date is May 11. No eagle nesting is known to occur. Wintering eagles have been observed primarily along major rivers where open water provides fish and waterfowl as food sources. Most winter observations occur along the Missouri River between the Judith River and Fort Benton, and along the Marias River. Potential nesting habitat is present along the Missouri and Marias Rivers. The adjacent Charles M. Russell Refuge contains no known nesting bald eagles (Haglan, 1987).

Peregrine falcons have been an occasional spring and fall migrant in the project area. Several historic eyries are identified within the project area. These were surveyed in 1985 and 1986 by Chris Hoff and no peregrines were found. Reported historic sites occur along the lower Marias and Missouri Rivers and Kevin Rim. The Marias River site contained good nesting substrate, but only one pair of prairie falcons were observed (Day, 1987). Potential nesting sites are present along the Missouri River, particularly in the White Cliffs area. Prairie falcons currently nest along the Missouri River. Two sites along the river in the CMR refuge were identified as reintroduction sites for peregrines (Endersen, 1978). West Butte in the Sweet Grass Hills and Kevin Rim have also been identified as possible reintroduction sites.

The piping plover was recently (January 10, 1986) listed as threatened in the project area. No sightings have been made within the RMP area, but no intensive inventories have been completed. This species could be a resident, occurring on lake shorelines or on gravel bars or sandy beaches along major rivers. Sightings and nesting of the piping plover has occurred at Fort Peck Lake and Nelson Reservoir, east of the RMP area.

MANAGEMENT COMMON TO ALL ALTERNATIVES

This section of the RMP/EIS gives guidelines for future management practices and will be combined with the selected alternative to serve as the RMP. These are taken from previous planning efforts which include the Missouri Breaks Grazing EIS, Prairie Potholes Vegetation Allocation EIS, Lewistown District Oil and Gas Programmatic Environmental Assessment, Lewistown District Forestry Sales Programmatic Environmental Assessment, Missouri Breaks Wilderness Suitability EIS, Lewistown District Wildlife Habitat Programmatic Environmental Assessment, and Management Framework Plans for Triangle, Blaine and South Bearpaw. Guidance which pertains directly to T&E species can be found on pages 33-39 in Chapter 2 and in Appendix 2.9 of the draft West HiLine RMP. This guidance will also be used to manage other actions taken on BLM administered lands such as vegetation manipulation, oil and gas development, reservoir construction, etc. This guidance is as follows:

1. The BLM will maintain and enhance habitat for all species of wildlife. The emphasis for habitat maintenance and development will be placed on present or potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, fisheries and crucial big game winter ranges.

2. No action will be initiated on public lands which will jeopardize any federally listed threatened and endangered (T&E) plant or animal. Impacts to other sensitive species and state designated species of special interest will be evaluated and negative impacts mitigated prior to the initiation of any action on public lands.

3. The BLM will work with the U. S. Fish and Wildlife Service (USFWS) on a threatened and endangered species reintroduction effort. The species of interest are the bald eagle, peregrine falcon and piping plover and black-footed ferrets.

4. The BLM will consult with the USFWS when any action may affect a threatened or endangered species per the Endangered Species Act (ESA).

5. Surface uses may be controlled or excluded within a quarter-mile to three mile zone of identified essential habitat of federal and state listed threatened, endangered and sensitive species. At the present time this stipulation will be primarily applied to raptor species.

6. Currently there are no known occupied peregrine falcon aeries in the area; however, historical and potential nest sites are known for the Kevin Rim, Marias and Missouri River Corridors and the West Butte of the Sweet Grass Hills. The BLM will adhere to the approved recovery plan and guidance from the Montana Peregrine Falcon Working Group, in the event a peregrine falcon is found or introduced.

Decision - No Effect

Rationale - These six factors provide for enhancing habitats, mitigation of negative impacts including those actions on BLM lands such as vegetation manipulation, oil and gas development, reservoir construction, etc., consultations with U.S. Fish and Wildlife Service per the Endangered Species Act, and guidance given in recovery plans, thus, providing the necessary habitats and/or protection for T&E species.

ISSUE ANALYSIS

This analysis will be divided into five issue areas as they are presented in Chapter 2, pages 78-90 of the Draft RMP/EIS.

LAND TENURE ADJUSTMENT

Proposed Action: BLM would achieve a public land base which consolidates public holdings in areas containing high value resources. Approximately 15,664 acres would be available for disposal through exchange, the Recreation and Public Purposes Act, and/or sale. An additional 34,428 acres would be available for exchange only. These lands do not meet Federal Land Policy Management Act (FLPMA) sale criteria, but have resource values which may be managed in private ownership or possess moderate resource values which might be exchanged for higher resource values in the area. The BLM would pursue land acquisitions in areas under special management such as the Upper Missouri Wild and Scenic River (UMNWSR), Wilderness Study Areas (WSA), Areas of Critical Environmental Concern (ACEC), and in concentrated public land areas with high resource values.

Decision - No Effect

Rationale - All land adjustments require that an Environmental Assessment/Land Report be prepared, as well as a feasibility report. These assessments will evaluate all the resource values being lost and/or gained. This requires that an assessment of the T&E habitat must be made. According to Appendix 1.1, threatened and endangered species habitat are classified as retention areas. These areas are lands which should be retained in long-term public ownership. Likewise, threatened and endangered species habitat are priority for acquisition. Priority areas include bald eagle historic nesting areas with continuing potential, active nesting sties, and documented roosting and wintering areas and active peregrine falcon nest sites and suitable sites for eagle and peregrine reestablishment. Existing and potential nesting areas for sensitive raptor species are also priority for acquisition. In the event T&E species could be affected, the BLM will formally consult the FWS to render an opinion and offer potential alternatives.

OFF-ROAD VEHICLE USE

Proposed Action: The BLM would provide for public off-road vehicle use while protecting the resource values and providing for public safety. The BLM would limit off-road vehicle use to designated roads and trails in the UMNWSR Corridor. Travel would be limited to existing roads and trails in WSAs, Cow Creek, Kevin Rim and Sweet Grass Hills ACECs and in important riparian areas. BLM would limit off-road vehicles seasonally in: elk and deer crucial winter and calving/fawning areas, antelope crucial range, raptor nesting areas, grouse nesting areas and sedimentary Breaks type soils. The Gist road between the cabins and the Missouri River would be closed to vehicular use. Any area designated for intensive ORV use would be located at least one-quarter mile from raptor nest sites, one and one-half miles from known grouse leks, one-half mile from known bald eagle nests and one mile from active peregrine falcon nests.

Decision - No Effect

Rationale - The restrictions placed on ORV use are designed to protect a variety of resource values, including wildlife and T&E species. Should any areas be designated for intensive ORV use, T&E species habitat would be protected from disturbance. Current and expected ORV use in the project area during the life of the RMP should be very light and impacts to the T&E species should be minor. Should ORV use become a problem in areas sensitive to T&E species, protective restrictions would be placed on any further use. If this did not eliminate the problem, the FWS would be formally consulted on possible alternatives.

RIGHT-OF-WAY

Proposed Action: BLM would permit rights-of-way, provided the impacts can be mitigated. Areas under special management or having important, sensitive resources would be avoidance areas. Wild segments of the UMNWSR and other nationally designated areas for natural or cultural values would be exclusion areas. Corridors would be established ½ mile either side of existing major facilities. These corridors are the preferred locations for the new rights-of-way. Communication sites would be excluded from West Butte in the Sweet Grass Hills.

Decision - No Effect

Rationale - Any right-of-way requires that an Environmental Assessment/Land Report be prepared. These assessments will evaluate all the resource values being lost and those being gained, and types of mitigating measures needed. This requires that an assessment of T&E habitat must be made. In the event T&E species could be affected, BLM will formally consult with USFWS to render an opinion and offer potential alternatives.

SPECIAL MANAGEMENT AREAS - KEVIN RIM

Proposed Action:

The BLM would use the following guidance to prepare an activity plan detailing specific management of the area. The Rocky Mountain Front raptor guidelines in Appendix 2.9 would be used to determine buffer zones and timing windows for activities in the area. These guidelines would be applied to any new activity which threatens to disrupt the nesting and rearing cycles of state or federal sensitive raptor species using the rim. These guidelines would be issued as standard stipulations to all new oil and gas leases in the area. In addition, BLM would use the guidelines to develop stipulations for new development on existing oil and gas leases. These guidelines would also be applied to federal mineral development within the management zone.

The BLM would inventory the Kevin Rim area for cultural resources. Based upon this survey and/or additional surveys the BLM would not authorize projects within ¼ mile of the escarpment unless impacts to the cultural resources could be mitigated.

BLM would encourage ROW off the west side of Kevin Rim. The BLM would authorize new ROWs off the escarpment (east side) along the four established ROW corridors. The BLM would establish a ROW corridor ½ mile on either side of existing ROWs.

Decision - May Affect (Positive)

Rationale - The Rocky Mountain Front raptor guidelines provide for management, protection and maintain/or enhancement of the peregrine falcon habitat. Kevin Rim has a historical aeries, which has not been used in recent time. This site is not a priority reintroduction site, but will be protected and maintained for possible reintroduction at some future date. As a designated ACEC and managed to the direction provided, a management zone would be designated around Kevin Rim to ensure that development of federal minerals under private and state surface, follow the same guidelines implemented on the ACEC. Overall, ACEC designation will provide maximum protection of the significant and relevant resources.

SPECIAL MANAGEMENT AREAS - SWEET GRASS HILLS

Proposed Action: The BLM would use the following guidance to prepare an activity plan detailing the specific management of the area. The area would remain open to mineral entry. Guidelines would be developed in the activity plan to attempt to resolve future conflicts between Native American religious concerns. The BLM would consult with Native American tribes prior to authorizing disturbance in the area. The BLM would apply the raptor guidelines in Appendix 2.9 to all new mineral leases and to new development on existing mineral leases within the ACEC and management zone to protect state and federal sensitive species. Allotment management plans in the ACEC would be revised to emphasize the maintenance and/or improvement of elk winter habitat. This may be accomplished through season of use modification, pasture modification, temporary exclosures, etc.

The BLM would review and recommend revoking the Bureau of Reclamation withdrawal on 529.67 acres on the East Butte. This parcel would then be managed under the guidance for the ACEC.

Decision - May Effect (Positive)

Rationale - The ACEC designation will provide guidelines for management, protection, and maintain/or enhancement of the peregrine falcon habitat. Raptor guidelines would be applied to all new mineral leases, new development on existing mineral leases within the ACEC and management zones to protect state and federal sensitive species.

The south facing cliff of West Butte, in the Sweet Grass Hills would be a primary hacking site, within the planning area, for the peregrine falcon. This site will be protected and maintained for possible reintroduction in the future.

Overall, ACEC designation will provide maximum protection of the significant and relevant resources in the Sweet Grass Hills.

SPECIAL MANAGEMENT AREAS - COW CREEK

Proposed Action: The BLM would provide maximum protection of the significant (historical and recreational) and relevant resources in the Cow Creek area. The area would be designated as an ACEC to protect, maintain, and/or enhance the Nez Perce Trail, Cow Island Trail, and other resources in the corridor. The BLM would prepare an activity plan providing guidance to preserve scenic, cultural, interpretive, recreation and paleontological values. The BLM would reevaluate and adjust the visual management rating in the corridor. The BLM would manage the area with a strong emphasis on riparian management. Existing livestock allotment management plans would be revised to incorporate grazing management practices which would improve riparian community conditions. Emphasis would be given to discourage or prevent livestock congregation along the bottoms. Any future right-of-way grant would be based on valid, existing rights within the corridor. All such developments would be subject to strict visual and reclamation stipulations.

Decision - No Effect

Rationale - No known T&E species habitat occurs in the Cow Creek area. However, an intensive inventory, other than black-footed ferrets has not been conducted. The BLMs plans to protect historical and recreational resources should have little or no impact on T&E species. Improved riparian conditions could increase the potential for bald eagle occurrence. Interpretation of historical values along the corridor would be limited with very little habitat disturbance occurring. Overall, resource protection would probably increase following the ACEC designation.

UPPER MISSOURI NATIONAL WILD AND SCENIC RIVER (UMNWSR)

The BLM would provide recreational opportunities and visitor services consistent with the Wild and Scenic Rivers Act. Future developments would also mitigate negative impacts to the natural and cultural resources. Mitigation measures would be determined after a site specific evaluation. The BLM would provide for all uses in riparian areas which would maintain or improve riparian condition. Recreational and livestock use of islands would not be permitted from April - May 15 during deer fawning and waterfowl brood rearing times.

The BLM would continue to maintain the undeveloped campsites by clearing brush, maximum one-quarter acre, for campsite locations and removing trash left at these areas. All undeveloped sites in the recreational and scenic section of the river would be signed. The BLM would maintain all semi-developed sites. New capital improvements would be allowed if impacts could be mitigated. Improvements in the wild section would be allowed if the developments can be serviced by existing roads or by river. The BLM would restrict developed sites to the recreational segments of the river. Such sites would only be established after a need and economic feasibility report has concluded the site is in the best interest of the public.

The BLM would continue to manage state campsites under the Memorandum of Understanding with Montana Department of Fish, Wildlife and Parks. These sites would be managed under BLM management guidance for the river as presented in the RMP.

Major concession developments would be restricted to the recreational segments of the river. The BLM would allow limited private sector initiatives in campground maintenance and development. The BLM would permit outfitters, guides and boat rental within/upon the river.

Decision - No Effect

Rationale - Management of UMNWSR would be similar to what is currently taking place, with some minor changes. Maintenance of campgrounds, both undeveloped and developed would have minor impacts to T&E species. Maintenance activities could temporarily displace or disturb T&E species along the river. Since no bald eagle or peregrine falcon nest sites are known to currently occur along the river, nesting disturbances should not occur. Federal actions undertaken in the UMNWSR would be subject to the guidance listed in Management Common to All Alternatives and listed on page 3 of this assessment. New campgrounds could be constructed if increased visitor use warranted it. Impacts to T&E species would be considered through an environmental assessment. Use of outfitters would be restricted to 30% of the daily user capacities. Areas of geological, historical, cultural, paleontological and natural area sites would be developed for self-guided interpretive study. This would cause little or no impact to T&E habitat, but could cause minor disturbances by increased human activity to T&E species present within the area. This could have a slight negative impact in the White Cliffs area if peregrine falcons are found to be present. Currently, no nesting peregrines are known to occur in these areas. The maintenance and/or improvement of riparian vegetation would help to improve potential habitat for T&E species, especially bald eagles. If any changes in the management of the UMNWSR occurs that potentially effects T&E species and their associated habitat, consultation with the USFWS would occur.

CUMULATIVE IMPACTS

The West HiLine RMP provides necessary commitments by BLM to insure that proposed site-specific actions covered by this plan are evaluated for impacts which "may affect" T&E species, including formal and informal consultation with the FWS whenever necessary. The actions considered in the RMP including other actions taken on BLM administered lands such as vegetation manipulation, oil and gas development, reservoir construction, and those actions continuing or anticipated on private and state lands such as farming, timber harvest, and reservoir construction do not jeopardize any T&E species at this point in time. The only anticipated major project during the life of this plan is the Bureau of Reclamation's Missouri to Milk River Water Diversion (MRWD). The RMP and MRWD should not present any cumulative impacts on T&E species.

This agency's opinion, considering the above five issues and guidance for Management Common to All Alternatives, is that there is "no effect" on T&E species for the proposed action.

REFERENCES CITED

Day, Tad 1987 Personal Communication

Endersen, J.H. 1978. Field Report - Survey of Falcon Habitat on the Charles M. Russell National Wildlife Refuge, 22-24, May 1978, 4pp.

Haglan, Bill, 1987. Personal Communication

* U.S. GPO: 1992-691-296/62008 REGION NO. 10